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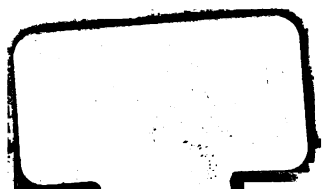
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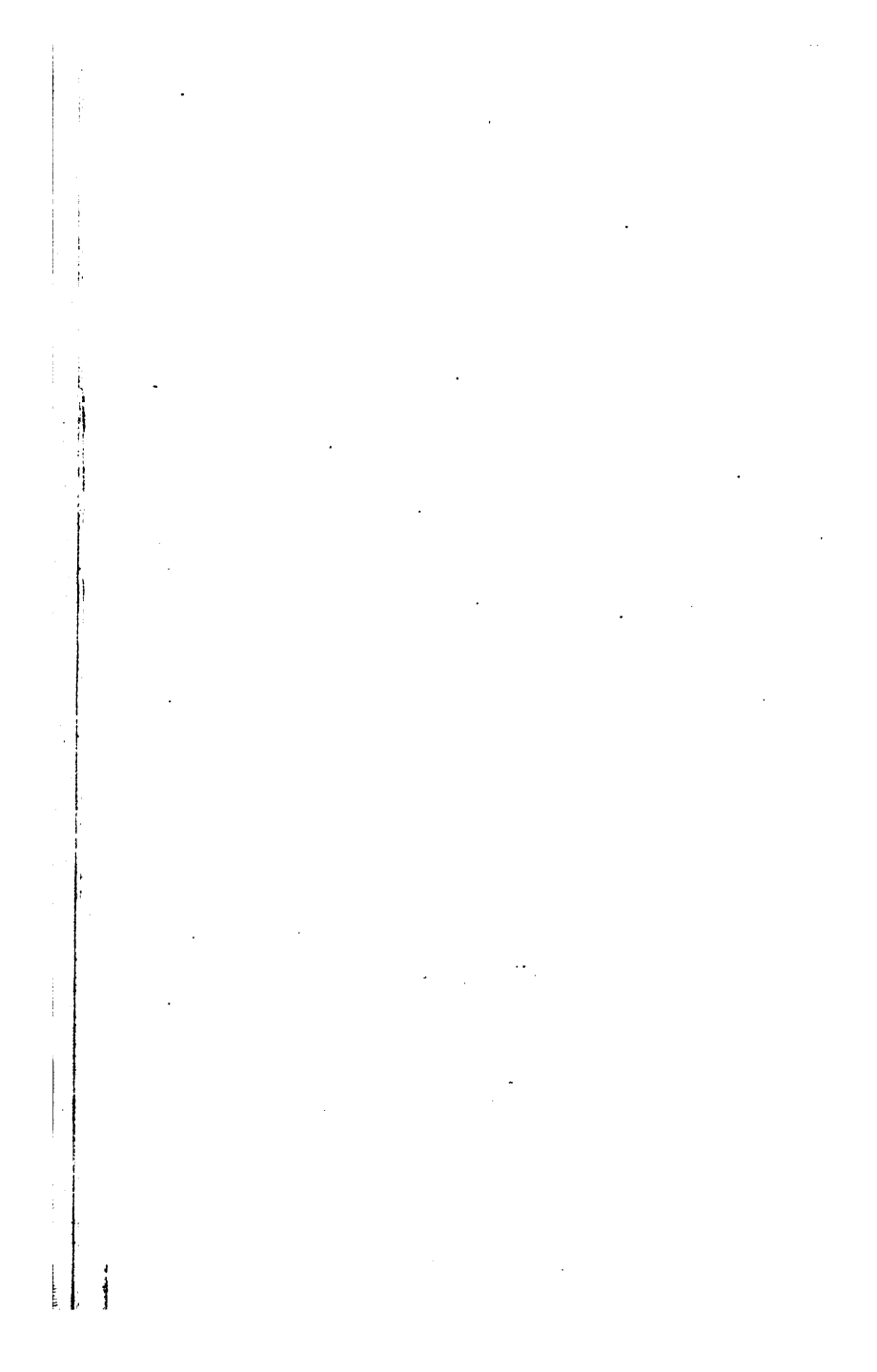


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THE  
ORANGE COUNTY STUD BOOK,  
GIVING A HISTORY OF  
ALL NOTED STALLIONS,

Bred and Raised in Orange County.

BY J. H. REEVES, V. S. ✓

TO WHICH IS ADDED A COMPLETE

History of the Horse,

IN ALL COUNTRIES,

IN HEALTH AND IN SICKNESS,

WITH A THOROUGH TREATISE

ON THE

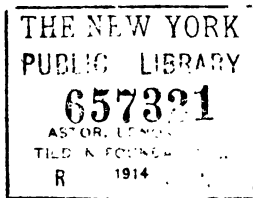
BREEDING, BREAKING, SHOEING AND  
CURING.

ADDED TO WHICH IS GIVEN

A LIST OF THE BEST TROTTING HORSES AND  
FAMOUS RACES IN THE UNITED STATES.

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## INTRODUCTION.

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THE author of this work, a native, and for years a resident of Orange County, and one whose avocation has thrown him much into the society of her horsemen, and consequently enabled him to acquire very valuable information in regard to the breeding of horses in that county, and the history and pedigree of its celebrated animals, in presenting his book to the public, hopes that, in estimating its value, the reliability, novelty, and usefulness of its statements will be taken into consideration by the reader. It is probable that no useful animal is more affected by climate and food than the horse; and while the climate of the County of Orange seems favorable to the production of the horse, and its rich pastures and fine meadows afford the elements for developing the finest form and most enduring constitutions, it is only by a judicious system of breeding that to these two requisites of a good horse, the third, that of speed, can be added.

Our ideas of the system of breeding which should be adopted in order to be successful, and the reasons upon which they are founded, constitute our first article. It contains no idle dogmas or worthless and fantastic theories, calculated to lead the earnest and honest searcher for useful knowledge into gross errors and mistakes, but rather a collection of rules, precepts, and facts, deduced from long experience in and close observation of all matters pertaining to the subject.

While it is an undeniable fact that many fast trotters have been bred and raised by persons who had no knowledge of these principles, yet if the pedigree of such could be correctly traced, it would be found that the breeders thereof have almost invariably conformed unintentionally to the

established rules, and that, consequently, instead of the progeny being simply the result of chance, it was produced under and in strict accordance with the fixed rule of the law of nature—that “like will produce like.”

In proof of the soundness of our theory in regard to breeding, we shall follow the above-mentioned article with the pedigree and history of a few of the most celebrated stock horses which have been produced in Orange County, which, if carefully perused, cannot fail to convince the reader of the infallibility of the law of reproduction. And while our work is designed more particularly for those who, in consequence of their interest therein, may properly be styled “horsemen,” yet we trust that it will not be altogether without interest to the general reader, and that he may obtain some useful information in regard to the animal which contributes so much to the comfort and pleasure of mankind, and which represents so largely the wealth of our citizens.

The author has spent much time in obtaining the reliable pedigree and history of the noted stallion, American Star, and facts are herein disclosed in regard to the history of Rysdyk’s Hambletonian never before made public; as these are now universally regarded as the representative stock horses of Orange County, and as the history of each is replete with interest.

## BREEDING IN ORANGE COUNTY.

---

BEFORE proceeding to the general subject of breeding horses and kindred subjects, we pass to notice the history and results thereof in Orange County, in which county the subject has received great attention, and has been rendered exceedingly profitable to those who have engaged judiciously therein. Indeed, from the time when the attention of the citizens of this county was first drawn to this subject, the standard of trotting horses throughout the country has been gradually elevated, and their speed so increased, that with the present established record of 2:17, it would seem that it has now reached its lowest second, and that not much greater achievements could reasonably be expected from horseflesh.

The first stallion that we ever saw advertised as possessing trotting qualities was imported Bellfounder, in the year 1823. He was a bright bay, with black mane, tail, and legs, standing fifteen hands high; and his superior blood, symmetry of form, and action, excelled all other stallions. He was allowed, by the best judges in Norfolk, England, to be the fastest and best-bred stallion ever sent out of that country. No doubt he was, for, as a proof, he stayed here only one year, and was then taken back. Bellfounder made the season at Washingtonville, with full pedigree given, at twenty-five dollars to insure a mare in foal. And here, well may we mention, that, forty years ago, twenty-five dollars made the farmers of Orange County open their eyes, for at that time, it is a fact well-known, that the *price* of service was looked at, *not* pedigree.

Bellfounder at that time was said to have trotted seventeen miles in an hour. Notwithstanding what was then considered an exorbitant price, Bellfounder was patronized, for the Crabtree mare was his daughter, and the mother of J. D. Sayer's Harry Clay, who has proved himself a trotter, and the sire of trotters. Bellfounder was the sire of the Charles Kent mare, the mother of the celebrated stallion Hambletonian, the property of the late Wm. M. Rysdyk, of Chester, Orange County, N. Y. Of this horse and his get, a place will be found in this book. We pass through the years of our Hylanders, Hickories, Wild Airs, Liberties, Lances, Bolivars, Ottoways, Bullfrogs, and a host of others, many of whose get made good mothers, properly bred, for they were all bred up. There was not much change in breeding valuable horses until about the spring of 1847, when Abdallah came into this county. He was a big, coarse, homely horse; and then the farmers first began to look at and turn their attention, many of them, to *pedigree* and *blood*. This horse Abdallah was almost if not the first point made in Orange County in bringing the breeding of trotters to the standard it has reached at the present time. Black Hawk came into the county next, and left some good colts. His mare colts have made some of our best breeders. Charles Bull, of the town of Blooming Grove, has a mare sired by Black Hawk that has raised him six colts by Hambletonian, all horse colts, and have been sold young. He has one foaled in 1871. And these colts have averaged Mr. Bull two thousand four hundred dollars. Other mares by Black Hawk are valued highly as breeders. Black Hawk died in Montgomery, July, 1853.

Cassius M. Clay, Jr. made his appearance here in the spring of 1852. His get has been of great value for breeding purposes, as it gave us more *size*, more *bone*, and *speed*. He left a large number of good ones in this county. His price for service was twenty dollars, which was thought to be extravagant by those who patronized him. J. D. Sayer's Harry Clay was one of his get—was foaled in the spring of 1853—was kept for service in this county until he was sold,

in 1862, to Harry Dater, of New York, for five thousand dollars. This horse was a stock horse that improved our breeds for *bone, size, and speed*. Of his get many are of note on the turf, his mares are highly appreciated on our breeding farms, and his horse colts kept as stallions have been sold at *high figures* and left our county. One is still here kept for service; this is Black Harry Clay, foaled in the spring of 1859. He was bred by Wm. Owen, and owned by him and Brad P. Doty, but has always been under the control of Brad. This horse is a trotter, and his get are trotters. One of his colts was sold to Gen. Kilpatrick for four thousand dollars in gold, and taken to Chili. Cassius M. Clay, the sire of Cassius M. Clay, Jr., stood for service in Montgomery, and died in the same stable that the Black Hawk died in, July, 1854. He was *driven* to death, and Black Hawk *doctored* to death. As this family of horses all have their representatives at the present day, we must give space and time for those that are still on the stage of action. We will leave this by giving a history of the celebrated stallion Hambletonian and his get.

# HISTORY OF THE HORSE HAMBLETONIAN,

THE PROPERTY OF THE LATE WM. M. RYSDYK.

---

THE pedigree of this celebrated horse is familiar to almost every horseman throughout the civilized world; indeed, perhaps no single horse ever foaled has won from his own intrinsic merits such an extensive and enduring reputation.

He was by Abdallah, the grandson of the renowned imported Messenger; his dam the Charles Kent mare, and she by imported Bellfounder.

Abdallah was kept for mares at Chester, Orange County, in the years eighteen hundred and forty-seven and eight, at twenty dollars to insure a colt. In the latter year, Jonas Seely, of the same town, owned this Charles Kent mare, and bred her to the horse Abdallah. She proved with foal, and on the fifteenth day of May, eighteen hundred and forty-nine, gave birth to the colt which since has become so famous throughout the land under the name of Hambletonian.

The mare, with her colt by her side, was sold by Mr. Seely to the late William M. Rysdyk, for the sum of one hundred and twenty-five dollars. The circumstances of Mr. Rysdyk were at this time very limited, and it was only through the assistance of friends that he was enabled to effect the purchase even at the low figures named by the owner. From the price paid we may readily infer that there was nothing very attractive or extraordinary either in the appearance of the dam or her foal. The colt, however,

under the careful management of his new owner, rapidly improved, and was shown the same fall at the fair of the Orange County Agricultural Society at Goshen.

At this exhibition he was led by the side of a horse, and was equipped with a white bridle, martingals, and girth, a fact often spoken of by men who were boys at that time. This brought the colt into some little notoriety, which arose, perhaps, more from the style of his equipment than anything else, as it was something novel in those days to see one so young exhibited in that style and manner. This was in the fall of eighteen hundred and forty-nine, and he was again shown in the fall of eighteen hundred and fifty at the same place, and under circumstances equally as well calculated to attract attention.

In the spring of eighteen hundred and fifty-one we saw him again, at the residence of his owner, and so greatly had he improved, and so rapid had been his growth, that although he was but two years old, he resembled in almost every particular a fully-developed horse.

Mr. Rysdyk, during this season, allowed him to cover four mares, as appears by Mr. R.'s books, which we have been kindly permitted to inspect, and to which we are indebted for much of the information hereinafter contained.

He got three colts from these mares (two horses and one mare), and no price is charged for the services upon the book, an omission, however, which never thereafter occurs. One of these colts soon thereafter came into the hands of Major J. Seeley Edsall, of Goshen, and under his careful handling soon proved himself a superior horse.

The Major kept him for mares four years at Goshen, and then sold him to Mr. Alexander, of Kentucky; he, however, had in the meantime become the father of the filly now so widely known throughout this country as Goldsmith's Maid. We might mention many other "good ones" from him, but for the present must trace the history of his sire.

In speaking of this—Hambletonian's first season—it is a fact worthy of remark, that a very large percentage of his

progeny thus far in his prolific career have been males, and that while large numbers of *them* have from time to time covered themselves with glory in their contests upon the turf, the reputation of the old horse as a father of trotters would scarcely arise above mediocrity were it entirely dependent upon the exploits of his daughters.

In the spring of eighteen hundred and fifty-two he was offered for service to a limited number of mares at twenty-five dollars to insure a colt. While we cannot assert that the practice of limiting the number of mares to be served during the season was inaugurated by Mr. Rysdyk at this time, yet it is a fact which cannot be gainsayed, that his example has been rigidly followed ever since by the owners of stallions in their advertisements at least. During this season he served seventeen mares, and got thirteen colts. In the fall he was taken to the Island to be trained as a trotter, and after going through a term of three months of this kind of education, he returned to Chester, without having made any public record of his performance upon the turf. Notwithstanding the assertion of the renowned Hiram Woodruff, that the Abdallahs could endure more early training than almost any other breed of horses, we are credibly informed that this son of Abdallah was retired from the turf thus early in consequence of his inability to withstand its severe exactions.

In the spring of eighteen hundred and fifty-three he was advertised for service. His full pedigree was given, and twenty-five dollars was again asked to insure a colt.

The breeders of Orange County, at this early day in the history of the horse, began to appreciate his fine qualities, and to extend to him a liberal patronage, as he covered during this season one hundred-and-one mares, and got seventy-eight colts. His success as a stock horse was now fully assured, and without any brilliant performance upon the turf, or any of that puffing and blowing so frequently used both to create and perpetuate the reputation of stallions, he entered upon a career never equalled in the annals of horse-breeding. In the spring of eighteen hundred and fifty-four



a similar advertisement appeared, with the single exception that the price was raised to thirty-five dollars. Eighty-eight mares were served, and sixty-three colts were paid for. In eighteen hundred and fifty-five, at the same place and price, he served eighty-nine mares, and sixty-four colts were paid for. In eighteen hundred and fifty-six, eighty-seven mares and sixty-four colts. In eighteen hundred and fifty-seven, eighty-seven mares and sixty-three colts. In eighteen hundred and fifty-eight, seventy-two mares and fifty-four colts. In eighteen hundred and fifty-nine, ninety-five mares and sixty-six colts. In eighteen hundred and sixty, one hundred and six mares and seventy-two colts. In eighteen hundred and sixty-one, ninety-eight mares and sixty-eight colts. In eighteen hundred and sixty-two, one hundred and fifty-eight mares and one hundred and eleven colts were paid for. During these preceding nine years he stood a part of the time at Goshen, but principally at his owner's stable in Chester, at thirty-five dollars to insure.

The brilliant performances of his colts upon the turf had now given their sire a national reputation. They were in great demand, and commanded high, and in many instances, exorbitant prices; and the breeding of trotters received a new and greater impetus than ever before throughout the county. A new road to fortune and wealth was opened, and many a farmer, into whose brain the idea of making a dollar in any other way than by the production of milk and butter had never entered, prompted by the success of a neighbor, turned his attention to breeding horses, and forthwith concluded "to put the old mare."

Mr. Rysdyk, taking advantage of this state of affairs, raised his price for the services of Hambletonian to seventy-five dollars, at which price, in the season of eighteen hundred and sixty-three, he covered one hundred and fifty mares and got ninety-two colts. The next season, eighteen hundred and sixty-four, the price was again raised to one hundred dollars; two hundred and seventeen mares were covered and one hundred and forty-eight colts got. In

eighteen hundred and sixty-five the price was raised to three hundred dollars to insure, one hundred dollars to be paid at time of service. During this season one hundred and ninety-three mares were served, and one hundred and twenty-eight colts got. The following season, eighteen hundred and sixty-six, at five hundred dollars, one hundred of which was required to be paid down, he served one hundred and five mares and got seventy-five colts. In eighteen hundred and sixty-seven, he served seventy-seven mares and got forty-one colts.

As might reasonably have been expected, from the polygamous course of life to which the old horse had for years been subjected, his physical powers became weakened, and during the year eighteen hundred and sixty-eight he was retired from the stud, and covered no mares. Notwithstanding, however, the prognostications of many that he was "played out," a season's rest had a highly beneficial effect upon him, and during the following season he served twenty-one mares and got fourteen colts. In eighteen hundred and seventy he served twenty-two mares and got thirteen colts. In eighteen hundred and seventy-one he was limited to thirty mares, which he served, and from which he got twenty colts, having left some seventy applicants unserved in consequence of this limitation. We have been informed by Mr. Geo. Andrews, under whose management and direction Hambletonian now is, that for the coming season of eighteen hundred and seventy-two over one hundred applications have been received, from which number, however, but thirty will be accepted. Upon a recent visit to Chester, the old horse was shown to us by his very gentlemanly manager. Although exhibiting many of the indications of old age, as a matter of course, yet his eye appeared bright and undimmed by years, while his coat was glossy; and those peculiar points which long since have led him to be pronounced the "King of Horses," still stand out in bold relief. While standing in his majestic presence, and remembering the fact that he was the sire of twelve hundred and fifty standing

colts, that they or their progeny were represented in almost every state and county throughout the United States, and in almost every country in the civilized world, and that upon their successful contests upon the turf, fortunes have been won again and again, we could not but respect and venerate him. Although, in the natural course of events, the days of the old horse will soon be numbered, yet upon the undeniable maxim that "like begets like" we shall continue to produce trotters in Orange County for years to come which will maintain our proud and pre-eminent position upon the turf.

The sons and grandsons of the princely old horse are yearly begetting colts superior to themselves, and with our present knowledge of breeding judiciously applied, we have no hesitation in asserting that the speed of trotting horses will still be vastly increased, and that the future Kings and Queens of the turf will hail from Orange County.

## THE SONS OF OLD HAMBLETONIAN.

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IN view of the length of time in which Hambletonian has been at the stud, and of the vast number of colts of which, during that time, he has become the sire—as portrayed by the preceding article—it cannot be expected that we will give more than a passing notice of a few of the many celebrated stallions which have sprung from his loins; and the first we will mention is—

### ALEXANDER'S HAMBLETONIAN.

This horse—or as he is more familiarly known in Orange County—Edsall's Hambletonian, was, as we have previously remarked, one of Hambletonian's first get, having been foaled in the year eighteen hundred and fifty-two, out of a mare by Bay Roman, he by Mambrino, and he by Messenger.

He was purchased, when quite young, by Major Edsall, of Goshen, and was kept by him until eighteen hundred and fifty-nine, when he was sold to Mr. Alexander, of Lexington Kentucky. During the time he was owned by Major Edsall he proved himself not only to be very speedy, but also one of the finest stock horses ever produced. It is said that, during the war, he was stolen by the rebels, and that Alexander offered a reward of one thousand dollars for his recovery. Stimulated by this liberal reward, parties immediately set out for his recapture, and one of the pursuants, mounted upon a thorough-bred mare, succeeded in overtaking the thief, when a conflict with arms commenced, during which

the stallion was unfortunately accidentally shot. He was returned to his owner, and the reward paid; but, either from the effects of the wound, or from over-exertion, he died very soon thereafter. He was the sire of Goldsmith's Maid, now the acknowledged Queen of the Turf; of Major Edsall, a very fast stallion; and of many other good ones not so well known; indeed, it is almost the universal opinion of the experienced horsemen of the county, that had he remained therein he would long ere this have acquired a reputation as a stock horse not even second to his sire.

### EDWARD EVERETT,

(Formerly Major Winfield), has recently, in consequence of the achievements of his colts, greatly distinguished himself as a stock horse. His dam is said to have been by imported Margrave, and was formerly owned and used under the saddle by the Hon. Thomas George, of this county. He bred her to Hambletonian; and, although recognizing the superior qualities of his mare, yet, for some reason, he gave the colt to Sheriff Lillum, upon condition that he would keep the mare until the colt was weaned. In connection with this fact, it may be mentioned, that Judge George bought one of Everett's sons, which has since become noted, viz., Mountain Boy, when four years old; but as this horse at that time showed nothing very promising, to say the least, he sold him to Esquire Bingham, soon after, for one hundred and fifty dollars.

Everett is also the sire of Judge Fullerton and Joe Elliott, who are of themselves enough to demonstrate the great value of their sire. He was purchased by Robert Bonner, for twenty thousand dollars, and is now standing at the Lagrange Farm in this county, under the management of Mr. Wm. H. Keetch.

### VOLUNTEER.

While the success of a stallion, either as a trotter or as a stock producer, must depend very much upon his own

intrinsic merits, yet, in both of these particulars, much also depends upon his management and the care and treatment which he receives at the hands or by the direction of his owner. In this particular, Volunteer has been extremely fortunate. His owner, Mr. Alden Goldsmith, is one of the most intelligent and practical breeders in the county, and, indeed, may justly be considered the pioneer breeder of trotters therein. His great experience and sound judgment has led him to adopt a judicious system of crossing this horse with mares of his own, the results of which have of themselves established a reputation for the horse which is exceedingly enviable. His dam was by Young Patriot, a descendant of Messenger; and his colts are generally very good sized, strong, and handsome.

Among the speedy ones, we may mention Hamlet, W. H. Allen, Huntress, and Bodine; while we understand that a Whirlwind will soon appear upon the turf which will astonish the world.

### MIDDLETOWN.

Recent exploits of the colts of this horse have greatly increased his popularity as a breeder, and have placed him in the foremost rank of stallions, some horsemen even predicting that he is the "coming stock horse." He is out of a mare by American Eclipse, a grandson of Messenger, and thus had a combination of the very best strains of the Messenger blood.

Although his colts are quite young, yet one of them—Music, owned by that expert horseman and judicious trainer, William Trimble, of Newburgh—a four-year-old, out of a second Star mare, has shown herself to be extremely fast upon several occasions.

Middletown has been absent from the county for several months, but we are glad to learn that he will make the coming season at Middletown, and we doubt not but that many of our breeders will avail themselves of his services.

## HAPPY MEDIUM.

The mother of this stallion was the renowned Princess, that so frequently and so gamely disputed the supremacy of the turf with Flora Temple, which is probably all the encomium he needs at our hands. He was sold last season by Mr. Fowler Galloway, to parties in Philadelphia, for a large price; yet the investment will undoubtedly be exceedingly profitable to his present owners, as we understood he afterwards covered one hundred mares at one hundred and fifty dollars for the season. Mr. J. S. Edsall, who has been the fortunate owner of some of the very best stock ever produced in the county, has a very fine bay stallion by him, out of a Black Hawk mare.

## IDOL.

Mr. Backman, the owner of this fine young horse, is the most extensive breeder of trotters in the world. And inasmuch as, since the establishment of his large business at Stonyford, he has almost monopolized the services of Old Hambletonian, and consequently has become the owner of a large number of his colts, it will not be within the scope of our little volume to give a detailed description of the many which are worthy thereof. We have selected Idol, not only as our favorite, but as the recognized head of his stud, to fill the small space we have to spare. He is one of the best proportioned animals in the county—handsome, intelligent, with fine limbs and gait. He is out of a mare by Harry Clay; second dam said to be by Terror. Although Mr. Backman may have evidence sufficient to prove the latter fact, yet, notwithstanding we have known this grandam for years, and always believed, from her appearance, that she was well bred, it was never discovered that she had the pedigree now claimed for her until after she became the property of Mr. Backman. The dam of Idol was bred by Lewis Tuthill, of Unionville, and was sold by him when she was three years old for one hundred dollars.

Since that time colts have been raised from her of sufficient value to amount to one or two very fine fortunes. The objection will undoubtedly be raised by some that Idol has Clay blood in his veins, and that his value is thereby considerably decreased. Permit us, however, to remark just here that, while we are willing to acknowledge that the Clays and trotters have not proved a success, we nevertheless consider the mares of this breed of great value as breeders. They are natural trotters, with splendid action and lots of speed, but have generally developed a "soft spot"—in other words, are deficient in staying qualities. This single defect, we have no doubt, will be remedied by judicious crossing; and we confidently predict that the time is not far distant when these mares will be almost, if not quite, as highly prized for breeders as the Stars.

Idol's colts are very promising; and we feel confident that, as soon as they acquire sufficient age, will duly honor their parentage.

### SAYER'S GUY MILLER.

This horse was bred by Mr. Richard Sears, of Orange County (now deceased), who lived on a large farm some three miles south from the Village of Goshen, and had given much time and attention to the breeding of fine horses, and would undoubtedly have realized his highest anticipations could he have lived to see the progeny of Guy Miller in its present stage of development. Sayer's Guy Miller was foaled in the spring of eighteen hundred and sixty-three, and was purchased by Mr. Daniel Sayer, of Unionville, Orange County, N. Y., at the public sale of Mr. Sears's estate, in the spring of eighteen hundred and sixty-five, for the sum of eleven hundred and fifty dollars. This horse was sired by Gallaway's Guy Miller, and he by Hambletonian. The dam of Sayer's Guy Miller was Sharpless Abdallah, by Old Abdallah; grandam, by One-Eyed Hunter, the sire of Flora Temple inheriting the Messenger blood from both sire and



dam. He took the first premium, awarded to colts of his class, for trotting, in Orange County, at the successive ages of three, four, and five years: he also took the first premium at the Agricultural Fair, when competing with some half-dozen of the first of Hambletonian's colts, as being the best stallion in Orange County. Mr. Sayer has bred his horse to a fine Harry Clay mare of his with remarkable success. He sold her first colt, "Tom Sayers," a three-year old, in the fall of eighteen hundred and seventy, to Budd Doble, for two thousand five hundred dollars, at the time of his winning the three-year-old stake at Middletown, in 2m. and 56s., being the same time made by his sire at the same age. A like sum has been offered for her second colt, and refused. This horse has served mares only at his owner's stable, and at the moderate price of fifty dollars to insure. He served, during the season of eighteen hundred and seventy-one, one hundred and fourteen mares, proving himself a sure foal getter, as well as a source of great profit to his owner.

More fortunately in the horse than in human kind, a noble sire more certainly transmits his estimable qualities to his posterity; and while the human kind may bask in the sunshine of ancestral glory, enjoy a secondary fame by keeping himself obscured in the paternal shadow, or claim for himself the undeserved merits of a family name, and with diplomatic skill and through artful devices bear off the laurels belonging to others, the horse kind, before his claims to celebrity and fame are considered, must produce the double assurance of, first, his family record, and secondly, his ability to perform or surpass what his ancestors have done before him. Without ascribing to ourselves the power to unveil the future, even to the extent of one day's fair or foul weather, yet, with a knowledge of facts before us concerning this same Guy Miller, his noble and enduring qualities and many points of excellence, we predict for him, as a getter of trotters, a position second to none among horses, in this country.

## AMERICAN STAR.

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Was a sorrel horse, with star and snip in forehead, two white feet behind, above the pasterns, and about fifteen hands high.

### PEDIGREE.

American Star was sired by American Star, he by Cock of the Rock, he by Durock, and he by Romp; Romp by imported Messenger. His dam was by the racehorse, Henry; grandam by Messenger.

That his dam and grandam were both thoroughbreds there is no doubt. His pedigree we shall try to prove, together with his history. For the last five years, the pedigree of the celebrated horse, American Star, has been a subject of much controversy, so much so, that we have taken much time and trouble to furnish a correct history of him. The great value attaching to the progeny of this horse, in the first and second generations, makes it of the utmost importance that breeders should have exact and reliable information as to the blood he possessed. Fortunately, in our travels through Orange, Ulster, and Columbia Counties, in New York, and through a greater part of New Jersey, we think we shall be able, clearly and unmistakably, to give a correct and reliable pedigree and history of the horse, American Star, and supply every link in the chain from the day he was foaled, the property of Henry H. Berry, Esq., of Pompton Plains, Morris County, New Jersey, in June, eighteen hundred and thirty-seven, until he died, the property of Theodore Dusenberry, of Goshen, in February, eighteen hundred and sixty-one. Henry H. Berry sought this horse while

owned by Edmond Seeley and Hiram Smith, and recognized him at once as the same horse owned and raised by him till he was seven years of age. This Mr. Berry told us; which, we claim, connects the last link with the first; and we simply mention this because Uncle Edmond did not give him the same pedigree. He claimed his dam was a Canuck, or Canada mare; therefore, some claimed he was not the horse raised by Mr. Berry. His lasting qualities, not only with him, but with his progeny, should be a proof most manifest that his mother was no Canuck. Being a personal friend of Henry H. Berry, we shall, as briefly as possible, give his own words as he told us in a conversation we had with him on this subject. In the fall of eighteen hundred and thirty-four Mr. Berry was in the City of New York, and a particular friend of his—Joseph Genung—urged him to buy a very fine mare, for breeding purposes, that a friend of his owned on Long Island, and, on account of being badly used and driven on the hard roads, her feet had given out, and she was offered cheap. Mr. Berry declined to buy her at any price, as he had horses enough.

Mr. Genung said her *blood* made her especially valuable for breeding purposes, as she was by the race-horse Henry, and out of a mare sired by Messenger. The next spring, Mr. Berry was in the city, and found that his friend Genung had bought the mare himself; and when he came to see her, he liked her so well that he did not hesitate a moment in making her his own. This was in the spring of eighteen hundred and thirty-five, and Mr. Berry owned and lived on a large and beautiful farm on Pompton Plains, New Jersey. At the time he bought this mare, she was a beautiful bay animal, somewhat advanced in years, sixteen hands high, with a star and snip in forehead, and both hind feet white above the ankles—a smooth and handsome mare, with a good set of limbs, but bad feet. Mr. Genung was a bachelor, and boarded many years in the family of Mr. Berry's brother, in the city, but died soon after he sold this mare, and thus all hopes of tracing her pedigree more definitely were cut off.

That she was by Henry, and a Messenger mare, there can not be a shadow of doubt. Mr. Berry thinks she was thoroughbred. Mr. Ira Coburn, of New York, owned horse called American Star. He was a bay horse, with a star in forehead, fifteen hands high, as round as a rope, with good set of limbs, pleasant disposition, and could trot very fast; but left no record, as he was used afterwards only as a gentleman's road horse. But, without getting ahead of Mr. Berry's history, we must give it as we received it from him. This horse was sent by Mr. Coburn, in the spring of eighteen hundred and thirty-five, to John Riker's tavern near Little Falls, Passaic County, New Jersey, in charge of Nicholas Smalley, to serve a limited number of mares. Mr. Berry bred this Henry mare, but she failed to get in foal. The next season, Mr. Coburn sent the horse to the same place, but in charge of another groom, who neglected and treated him so badly that Mr. Riker sent word to the owner that he had better take him away. The advice was followed and the horse returned to New York. Very naturally, Mr. Coburn became heartily disgusted with the stallion business and meeting Mr. Berry a few days afterwards urged him to take the horse home with him, breed him to as many mares as he liked, and then castrate him—an operation, at that time, in the whole country, performed only by Mr. Berry. This was in eighteen hundred and thirty-six, that Mr. Berry took the horse with him, bred him to his Henry mare, then carried out the instructions of his owner. This mare proved in foal, and dropped this colt in June, eighteen hundred and thirty-seven, which became so famous in Orange County under the name of his sire, American Star. Mr. Berry says he was disappointed with his colt on its first appearance, both in color and size. However, the colt received but little care or attention—took it as he could catch it—hardly ever under a shelter until three years of age, when he was taken out of the barnyard and broken to harness. There was nothing handsome or stylish about him, but he had a great deal of speed. Mr. Berry ran him a great many quarter and half-

mile races, and never had him beaten. At five years of age he served mares at most any price, and was driven to a butcher wagon. He then began to show a fine trotting step. This was in eighteen hundred and forty-two; and the next season he received about the same treatment, and could out-trot any horse in the whole country, and haul that butcher-wagon after him. Mr. Berry often made the remark, that he had the most bottom and best game of any horse he ever saw. In the spring of eighteen hundred and forty-four, he was fixed up a little, and advertised to stand for mares at New Milford and Warwick, Orange County, N. Y.; to insure a mare in foal for seven dollars; pedigree given in full; and warranted to haul a wagon on the road a mile in three minutes. From some cause he served but very few mares—in Warwick, we think not any. In August of the same season (eighteen hundred and forty-four), Mr. Berry sold him to Mr. John Blauvelt, a silver-smith in New York City, for three hundred and fifty dollars and a set of single harness. Mr. Blauvelt used him for a road horse, and, as he says, the best he ever rode behind, for pluck, bottom, and speed; but the hard roads and hard drives soon showed the weak points of his dam—his feet giving out, and quartercracks making their appearance, he was sent up to Mr. Berry to be wintered and cured. The next spring he come out all right; but Mr. Blauvelt, apprehending that again the same cause might produce the same effect, traded him off to Cyrus Dubois, of Ulster County, New York, for a grey gelding, at one time owned by Sheriff Westbrook of that county. Dubois had a partner, William Burr, a horseman, now of Hoboken. What time Dubois owned him we cannot ascertain; but he stood the horse a part of the time in Orange County. Dubois traded him to Jas. Storm, of Hudson, for a bay mare; and after a few days Storm sold him to Walter Shafer, of Hillsdale, Columbia County, New York; who kept him one or two seasons, then sold him to Edmond Seeley and Hiram Smith, of Goshen, for seven hundred and fifty dollars. This was in the fall of eighteen hundred and forty-

nine, and in eighteen hundred and fifty he stood for mare in Goshen, and served fifty-four mares and got forty-five colts, at fifteen dollars per colt. One of these colts we remember. He was called the Randall colt; and, we are very credibly informed, will make a season in this country this year, under the name of his sire, American Star. He has a fast record. In eighteen hundred and fifty-one, he (old Star) made the season in Goshen, at ten dollars to insure—served eighty-seven mares and got sixty-three colts. In eighteen hundred and fifty-two, at the same place and same price, served ninety-two mares and got sixty-two colts. In eighteen hundred and fifty-three, same place and same price, served forty-nine mares and got thirty-five colts. That fall he was taken to Elmira, Chemung County, New York, and trotted a race against Jupiter. It was a well contested race, Star winning the sixth heat and race, in 2:43. In eighteen hundred and fifty-four, the next spring, he was taken back to Elmira and stood for mares, served twenty and got fifteen colts, at twenty dollars per colt. All these colts were mare colts. A very large majority of his get were mares, a fact often spoken of by those who knew. In eighteen hundred and fifty-five he went to Piermont, Rockland County, and served fifty mares and got thirty-five colts, at twenty dollars. In eighteen hundred and fifty-six he went to Mandata, Illinois, and served thirty mares and got twenty colts, at twenty dollars. In eighteen hundred and fifty-seven he again stood in Goshen, and served sixty-four mares and got fifty-three colts, at twenty dollars. In eighteen hundred and fifty-eight he made the season in Goshen, served fifty-five mares and got forty-five colts, at twenty dollars. Up to this time the horse had been owned by Edmond Seeley and Hiram Smith, but principally under the control of Uncle Edmond, as we all called him. In the fall or winter of eighteen hundred and fifty-eight, Hiram Smith having found some little fault with the care and treatment the old horse was receiving, Uncle Edmond says, "Here is five dollars, which I will give you to say what you will give or take."

## ISTORY OF THE HORSE.

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### CHAPTER I.

#### THE CHARACTER OF THE HORSE.

Now one of the most universally distributed everywhere he is recognized as the most useful quadruped servants of man; for in those countries of Arabia, for instance—in which he is in full and unrestricted companionship of man, and with the family of his master, and, like him in the tent, his sagacity far surpasses that of wild horses, however affectionately they may be loved. From the early ages of the world the horse seems to have been devoted to the purposes of war or pleasure, and was the agricultural drudge. But the beauty, docility, and tractability of the horse have now connected him, directly or indirectly, with almost all the purposes of life. In different countries in form and size, it is modified by the influence of climate, food, and cultivation; but from the war-horse, as he is depicted in the sculptures of ancient temples, to the stately charger of Holland, from the fleet and beautiful Arabian to the native Shetlander, there is an evident similarity of character, which clearly stamps his common

The thorough-bred horse is the source from which all valuable kinds are produced, not only for racing, but for the pleasurable engagements of hunting, and for the services of utility, the true position in which, and as regards the production, the supply and the use of these useful and valuable animals, cannot, it is believed, fail to attract attention and curiosity.

eight years of the time his father, Hiram Smith, being a partner. AMERICAN STAR passed through many hands, was generally neglected and ill-treated; trotted in *his* day many races, principally on the road or ice, consequently left no very fast record. No horse ever lived that more certainly stamped upon his offspring his own characteristics of *gait, disposition, and bottom*, than did American Star. Of his get, you will find a large percentage mares; and many of them may be found on the breeding farms of Orange County, highly appreciated by their owners; and well may be, for they are the mothers of the fastest trotters in the world.

Of his horse colts but a few were kept as stallions. The Randall colt, as he was called, and we have before spoken of, was foaled in eighteen hundred and fifty-one, is a trotter, and a getter of trotters. Magnolia, Sir Henry, and Monitor, all *good stallions* by Star, have been taken out of the county.

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#### NOTE TO THE READER.

The preceding matter, it will be borne in mind, was written in 1871.



# HISTORY OF THE HORSE.

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## CHAPTER I.

### THE CHARACTER OF THE HORSE.

THE horse is now one of the most universally distributed animals, and everywhere he is recognized as the most useful amongst the quadruped servants of man; for in those countries—some portions of Arabia, for instance—in which he is admitted to the full and unrestricted companionship of man, sharing his food with the family of his master, and, like them, a dweller in the tent, his sagacity far surpasses that of our stable-reared horses, however affectionately they may be treated. In the early ages of the world the horse seems to have been devoted to the purposes of war or pleasure, whilst the ox was the agricultural drudge. But the beauty, strength and tractability of the horse have now connected him, directly or indirectly, with almost all the purposes of life. If he differ in different countries in form and size, it is from the influence of climate, food, and cultivation; but otherwise, from the war-horse, as he is depicted in the sculptures of ancient temples, to the stately charger of Holstein and of Spain, or from the fleet and beautiful Arabian to the diminutive Shetlander, there is an evident similarity of form and character, which clearly stamps his common origin.

As the thorough-bred horse is the source from which all the most valuable kinds are produced, not only for racing, but likewise for the pleasurable engagements of hunting, riding, driving, and services of utility, the true position in which we stand as regards the production, the supply and demand of these useful and valuable animals, cannot, it is presumed, fail to attract attention and curiosity.

Various opinions have recently been expressed concerning our breed of horses. It has been gravely asserted that race-horses of the present day have degenerated when compared with their ancestors; that the customs of racing have indeed, led to this degeneracy, and that they are calculated to increase it; moreover, that the supply of horses for purposes of utility is unequal to the demand. Theories have been promulgated, and suggestions advanced, as to the most effective means of correcting these alleged evils. One gentleman who has written on the subject, proposes to resort to the Arab blood to regenerate our racing stock, and recommends in connection with that plan, the revival of races at long distances as tests of stoutness, to promote a better breed of horses. Another advocates the introduction of three-parts bred sires to produce horses for particular service. However well intended, they are entirely opposed to improvement, or the attainment of the objects in contemplation. For the purpose of forming correct opinions, it is necessary to consider each subject separately; and, as the thorough-bred sire is the only parent stock from which the other valuable kinds can be produced with success, some research into his origin, and the lineage by which the breed has been perpetuated, together with the agency—namely, racing—by which his repute has been established, must necessarily form a portion of these observations. Comparing the performance of the ancient worthies with those of modern times, it is the only means of deciding on the question of degeneracy. Racing has been the foster-mother of the high-bred racer, it is the test of his breeding, his speed, his power of endurance, his courage, and his stamina.

In the horse—not perhaps to the same extent as in the dog, but still to a great extent—it is our own fault if we have not a friend as well as a servant. When well treated, he becomes sincerely attached to us; the utmost of his strength and speed is at our call, and he is never happier than when employed in our service. He even enters into many of our enjoyments with as great delight as we ourselves. See him following the hounds—there never was a rider who entered more thoroughly into the ardor of the chase than he does.

So great is the docility of the horse, that he is readily trained to occupations adverse to the natural gentleness of his nature. With kind treatment, there is little within the comprehension of an animal which the horse is not capable of attaining; and no animal, not even the dog, more fully

comprehends, or more readily masters, the lessons given to him. The astonishing feats of the horses of the circus are an additional exemplification of this, and their accomplishments are invariably the results of the anxiety of the docile animals to obey their teachers, who know their business too well to make use of any unnecessary harshness towards their pupils.

In many countries of modern times wild horses have a material influence on the breed.

There is a great difference between the wild horse of Asia and that of South America. The former, unless taken young, can scarcely be tamed; the latter is remarkable for the readiness with which he becomes domesticated, and that thoroughly, as we shall see when we speak of the Australian horse. It has been conjectured that this readiness to succumb to man's rule is the effect of climate; others, again, produce it as an instance of the improvement in the cerebral development of the South American horse, inherited from progenitors which have been domesticated for many centuries, and which is no doubt the correct inference.

In a wild as well as a domesticated state the sympathy of horses for each other is great. In the thinly-inhabited portions of South America the custom in traveling is to catch a wild horse with the *lasso*, load him, and proceed a reasonable distance till a fresh horse can be caught. If the traveler, on his unwilling steed, should fall in with a troop of wild horses, these will eagerly call to their burdened companion to shake off his load. He is not long in taking the hint; and in such cases nothing but plenty of nerve and strength on the part of the rider, accompanied with a free use of the spur, will prevent the animal from disengaging himself from his burden, and taking to his heels.

It would be easy to fill an entertaining volume with instances of the sagacity of the horse, were this the place for such considerations. His general character may be shortly summed up as possessing patience, willingness, fidelity, and friendship in the highest degree, especially attaching himself to man when well treated; but he will not, like the dog, preserve those qualities under ill-treatment, evidently taking it to heart, and becoming, in consequence, stupid, spiritless, and generally of little value. He who would ill-use this noble animal, not only acts against his own interest but degrades himself far below the condition of his victim. An unmerciful man to his horse should, by common consent, be a marked man. Any show of good qualities which such

a man may pretend to is mere hypocrisy. Let all men shun him.

The horse is one of the most important acquisitions made by man from the animal kingdom. Without him civilization would have made little progress, and European nations would have been, even now, scarcely emerged from barbarism. Agriculture, commerce, our luxuries and pleasures, are alike indebted to this noble animal, whose form and sagacity would appear to have been adapted by Providence to the service of man; and such is his pliability of physical structure and constitution, that man may mold him to the form and bulk best fitted for the particular service in which he is to be employed, whether as the symmetrical racer, or as the heavy draught-horse.

The principal locality of wild horses exists in South America, where they herd in countless numbers in the plains extending from La Plata to Patagonia. These were originally introduced by the Spaniards, and have increased with incredible rapidity; so much so, that by some travelers their single troops are numbered by tens of thousands. The color of the South American wild horse is generally chestnut, bay, sorrel, or black, and they are destined to exercise a great influence on the newly-sprung countries of the Pacific, into which they are chiefly introduced from the ports of Chili and Peru.

When the Spaniards first landed in Mexico, their horses were objects of wonder, and they impressed the inhabitants with the idea that horse and rider were one animal of the Centaur species.

The horse is eaten in some parts of South America, especially in the southern portions, and its flesh is esteemed a great delicacy. Horseflesh is amongst these people considered as necessary at the festive board, as is the sirloin of beef amongst ourselves.

#### FOREIGN BREEDS OF HORSES.

And first of these stands the Arabian—a vague term, the breed of horses being as diverse as the districts on which they have been reared. Generally speaking, we attach more value to these horses than they really possess. Arabia is the land of romance to Europeans, and its horses have lost nothing by romantic associations. With the exception of the head, the majority of Arabian horses would scarcely pass muster—at any rate, not as first-rate horses. They are, for

the most part, deficient in height, and very light in the body. Their powers of endurance are, however, great. We once experienced great pain in sitting behind four of them across the Egyptian desert, over which they took us in about fifteen hours, including of course long stoppages, as were requisite. We remonstrated with the driver that the horses were not changed, and the reply was, that there were none to change. He, however, asserted that they would be none the worse for it, and to judge by the appearance of the animals on reaching Cairo, we were of the same opinion.

By far the most beautiful variety of the Arab horse is the Barb, as he is called from his having been brought from Barbary. The Barb is, however, small, rarely exceeding fourteen hands, and is thus considerably less than the Bedouin horse of North and East Arabia. This breed of horses was introduced long ago into England; the celebrated Godolphin Arabian, so called, was supposed to be a Barb. It is to this breed that Spanish horses owe their fire and beauty, and most of the best English race-horses have the blood of the Barb in their veins. It is, however, remarkable that, considering the lavish expenditure on improving the breed of English horses, no attempts have been made to procure any of the *mares* of the highest Arabian stock. We appear to have placed the chief dependence on the Arab stallion, though it is well-known to Oriental breeders that the mare is of by far the greater importance. Some authors say that the Arabs will not part with any of their finest mares. This is, however, an error; there is little that an Arab will not part with for money.

The Arab horse bears a high character for his docility and sagacity, and it would be strange if he did not possess both qualities. He is brought up in his owner's tent, and literally with his family. In the absence of any other amusement, the education of the foal is a primary object. He is invariably kindly treated, and soon acquires a desire to please his biped companions, and to take a pride in executing all they require of him. The constant companion of man, he soon learns to imitate man in every particular of which he is capable. Any horse placed in the same position would acquire the same qualities. It is said of the Arab horse that if its rider fall, and be too much injured to rise, the steed will stand still, and neigh till assistance arrives. If he lie down to sleep, his horse will watch over him, and rouse him at the approach of man or beast.

The dry air and sands of Arabia are well adapted to pro-

duce muscular fibre, but no superfluous fat. The Arab is as lean as his steed, and the enduring power of both is wonderful. Fatigue, privations, and thirst, are the lot of both, and their country makes them what they are, i. e. adapted to the climate.

The skin of light-colored Arabians is either pure black, or blueish-black, and this gives them the silvery-gray color so much esteemed. Bay and chestnut are common, and are considered good colors. Horses of a dark-gray color are not so much esteemed as runners.

But there are in fact many breeds of horses in Arabia. In Egypt alone they reckon five, the least of which can scarcely be classed above the rank of ponies, the hardiness and speed of which is surprising, though laboring under every possible disadvantage but that of kind treatment.

As our space will not permit us to enter into these varieties, we will notice the noble breed only, which is thus described by Count Rzeizousky :

"Above all the horses in the world, the *Kohlan* is distinguished for the goodness of his qualities and the beauty of his form. An uncommon mildness of temper ; an unalterable faithfulness to his master ; a courage and intrepidity as astonishing as they are innate in his noble breast ; an unfailing remembrance of the places where he has been—of the treatment he has received ; not to be led, not to be touched but by his master."

The Arab horse is not gorged with large quantities of food as our horses are. In spring they are turned out to pasture, when pasture is available ; in the desert it is out of the question. At other periods of the year their day's provender does not exceed five or six pounds of barley, with sometimes a little cut straw, and on this they can sustain great fatigue and exertion. The Arabs give them a very small quantity of drink two or three times a day, judging that an unlimited supply of water would not only destroy their shape but effect their breathing also.

The Bedouin Arabs are great horse-breeders, and produce some first-rate animals. The skill of these people as breeders is unsurpassed in any country, and their accumulated experience is handed down from father to son by oral tradition, never by written rules.

The genealogy of the horse is reckoned from the mother ; and the Arabs are as particular in their pedigree of the noble breeds of horses as in that of their chiefs. It is an undoubted fact they have pedigrees amongst them of not less

an five hundred years, with the succession distinctly traced. In the case of these horses, it is necessary for the chiefs to attest the coition of the animals, and also to certify the birth of the foal. If either of these prescribed formalities have not been attended to, the colt, however, good his points, has lost caste, and will never bring a good price, or be considered of value, however fine may be his action.

#### THE ABYSSINIAN HORSE.

Upper Egypt produces horses of much larger stature than the Arab—or rather we should have said Abyssinia, for the original stock is from the deserts of the latter country. They possess great speed, and can endure almost any amount of fatigue, the universal characteristic of the Oriental horse. Some of these have been imported into England, but do not seem to have answered the expectations of their importers, and for the usual reason—stallions were imported instead of mares.

“What figure,” says Bruce, “these horses would make in point of fleetness, is very doubtful, their make being so entirely different from that of the Arabian; but if beautiful and symmetrical parts, large size, strength, and most agile, nervous, and elastic movements, great endurance of fatigue, docility of temper, and seeming attachment to man beyond any other domestic animal, can promise anything, these horses are, above all comparison, the most eligible in the world.”

#### THE BARB.

Is not properly an Arab horse, but a race nearly allied. They are supposed to have been produced by a cross with Algerine horses, these being a cross with a south European breed and the Arab. They are often larger than the Arab, with fine heads and crests, well formed about the shoulder, with straight backs, drooping considerably towards the haunches. They are remarkably swift.

These horses are seldom kept in stables, but are picketed to the ground. They are watered and fed only once a day, the former at one o'clock, and the latter at sunset. The mode of cleaning the horse, is to plunge him in a river two or three times a week, and allow him to dry without being rubbed down.

The superiority of some of these horses has been proved in England; the Godolphin Arabian, as already stated, was

supposed to be a Barb, and contributed more to the improvement of our racers than any other foreign horse before or since.

#### THE AUSTRALIAN HORSE.

At first, horses were exclusively imported from England, but they were found rapidly to degenerate. The coasts of Chili and Peru were then tried for mares, and this step was followed by the production of a breed admirably suited to the country. Surefootedness and endurance are now eminently the characteristics of the Australian horses, and their sagacity probably exceeds that of all other breeds. It is wonderful to see an Australian stockman at full speed after a drove of wild cattle, amidst a mass of forest of which neither he nor his horse have the slightest knowledge. The ground beneath his feet is full of yawning chasms in the earth, caused by the dryness of the climate, whilst the overhanging branches threaten him every moment with such blows on the head, as, if not avoided, would speedily put an end to his horsemanship. Under these circumstances, there seems to be a compact between horse and rider, that the horse shall look at all dangers beneath his feet, whilst the rider ducks between the overhanging branches; and between them they perform feats which few steeple-chasers would face, though accidents are very rare.

A similar, and perhaps a still better, breed is rapidly being introduced into New Zealand. The breeding stock is the same, but from the greater favorableness of the climate, it is probable that this country will produce one of the finest breeds of horses in the world.

We have often witnessed the process of these persons in breaking the wild horse as he finds a purchaser from the ship. As it is curious, and may afford hints to English horse-breakers, we will describe it. A post is firmly fixed in the ground, to which a ring is attached. The horse is then brought to the post with a long halter, and made fast. The breaker takes his poncho—a large cloak worn by the South Americans—and ties it round the eyes of the horse, so as to blindfold him. The animal is then left to himself, and shortly begins to tremble with fright at his unusual helpless position. A profuse perspiration breaks out upon him, and if suffered to continue thus, he falls from the exhaustion of the nervous system caused by his fright. Before this takes place, a rude saddle is placed on his back, heavily weighted at the stirrups, and to this he quietly submits. Presently,



when the animal is stupefied, the breaker goes up to him, and patting his neck and otherwise caressing him, in some respects soothes him, and this goes on till the horse exhibits signs of reliance on the breaker. By-and-by the poncho is removed, and the lesson wished to be imparted has been learned, viz., that of looking on man, who has relieved him from the fearful poncho, as his friend.

We have seen this lesson so skillfully administered that the breaker has removed the weighted stirrups, and mounted on the bare back of the horse, which behaved with perfect docility. More generally, however, the lesson—always the same—has to be repeated, till the horse becomes perfectly docile, having learned to rely on man. And if afterwards kindly treated, there are no more docile horses to be found than these recently wild horses.

#### THE TURKISH HORSE.

The only remaining Oriental horse worthy of notice is the Turkish horse. These are principally descended from those of Arabia, Persia and Barbary. Their bodies are long, and their cruppers elevated; their foreheads are slender, and they carry their heads higher than the Arabian. They possess much fire and spirit, are extremely active, and are admirably fitted for the operations of Turkish cavalry. They are very affectionate, evincing great regard for their masters and the attendant grooms.

The Turks never strike their horses, and the animals, as a matter of course, never bite nor turn restive, their gentleness and obedience being perfect. The Turks take a pride in their horses, even beyond the Arab; and much as we have all read of Turkish ferocity, these people are, *par excellence*, the most kindhearted of the human race. They caress their horses with almost as much affection as their offspring, and their children are taught to treat them with equal gentleness. They especially delight to teach their horses all kinds of entertaining and useful tricks, amongst which they will pick up a stick or scimitar from the ground, and lift it to the rider. When a horse has learned this feat his nose is adorned with a silver ring, as a badge of his proficiency.

Many Turkish horses have at various times been introduced into Britain with good success, and have become the sires of fine horses.

In the preceding notice of horses, our aim has been to give such of their characteristics as may be suggestive rather

than amusing to the farmer, who may derive therefrom many hints as to the treatment of his breeding-stock.

#### THE DUTCH HORSE.

The Dutch horse is large, but his action, though slow, is steady and agreeable.

The Flemish horses, though as large as the Dutch, are inferior, their heads being uncouth, and their feet large and flat. They are subject to watery humors in the legs, and swellings in the heels. This arises from the low, rank pastures on which they are fed—these producing rank grass, forming adipose and cellular substance, and rendering the muscular fibre soft. From the many hints of this nature thrown out in the present treatise, the farmer will be at no loss to perceive the influence of pasture on breed.

#### THE DANISH HORSE.

These are generally about fifteen hands high—lean, hardy, and capable of drawing great weights, being more remarkable for this than for speed.

A notice of the system pursued in the Danish royal stables may not be without its use. The floor is laid with rough stones, on an inclined plane, and is so laid to prevent lameness, which frequently occurs when horses are allowed to stand in their unmoved litter. The mangers are semicircular, and are high; the cribs are of iron.

#### THE SWEDISH HORSE.

These nearly resemble Scotch ponies, strong-built, clean, neat, hardy little animals, better adapted, from their small size, for the road, rather than for draught. On a journey they rarely tire, and from the firmness of the hoofs, as seldom stumble, whilst swelled legs and greasy heels are unknown amongst them. Their size is from thirteen hands upwards, and they are stout in their make.

Besides these is the sledge-horse, of larger size and thinner make. These are almost exclusively employed in drawing sledges, and the speed with which they trot with these is remarkable, going at the rate of eighteen miles in an hour. At Gottenburg there are annual races, not for galloping, but for sledge-trotting. The fleetest of these trotting horses frequently sell for five hundred dollars each. Mr. Wilson states that the Swedish horses are only shod in the fore-feet.

The Finland horses are smaller than the Swedish, seldom more than twelve hands, but finely formed, fleet, and good in their paces, trotting twelve miles an hour with ease.

The Norwegian horses are larger than the Swedish, and are very hardy, and remarkably sure-footed, as would be the case from the hilly nature of the country.

The Russian horse scarcely merits a separate notice, the ordinary breed being only distinguished for its ugliness, towards which its woolly hair in no slight degree contributes. They are hardy, patient, and bold.

## CHAPTER II.

## HISTORY OF THE ENGLISH HORSES.

THAT horses were introduced into Britain long before the Christian era, we have abundant evidence, and that the inhabitants had acquired great expertness in their use is equally certain.

During the occupation of England by the Romans, the British horse was crossed to a considerable extent by the Roman horse, and yet, strange to say, no opinion is given by any historian, Roman or British, as to the effect of this. After the evacuation of England by the Romans, and its conquest by the Saxons, considerable attention was paid to the English breed of horses; and we know that after the death of Alfred, and under the reign of Athelstan, several *running horses* were imported from Germany: this being the first historical intimation we have of running horses in England.

William the Conqueror took great pains to improve the English breed, introducing many fine steeds from Normandy, Flanders, and Spain. This monarch owed his success at Hastings chiefly to his cavalry; his own horse was a Spanish one. In this reign we have the first notice of horses being employed in agriculture. They had been used for the saddle for many centuries.

The English had now become sensible of the value and breed of their horses, and in the twelfth century a regular race-course had been established in London; this being none other than Smithfield, which was at once horse-market and race-course. Fitzstephen, who lived at that period, gives the following account of the contests between the palfreys of the day:

"When a race is to be run by horses, which in their kind are strong and fleet, a shout is raised, and common horses are ordered to withdraw from without the way. Two jockeys then, or sometimes three, as the match may be made, prepare themselves for the contest, such as are used to ride, and know how to manage their horses with judgment, the grand point being to prevent a competitor from getting before them. The horses on their part are not without emulation. They tremble and are impatient, and continually in motion. At last, the signal once given, they hurry along with unremitt-

ting velocity; the jockeys, inspired with the thoughts of applause and the hopes of victory, clapping spurs to their willing steeds, brandishing their whips, and cheering them with their cries."

This is a quaint and amusing picture of the dawning spirit of horse-racing. Crossing was evidently an acknowledged accomplishment, and personal flagellations between competing jockeys not unfrequently resulted from excess of emulation. Fertile indeed must have been their imaginations if they dreamed that their racing frolics would, in process of time, grow into an important national speculation; much less could they have anticipated that their unsophisticated pastimes were the embryo of that fame which has been acquired by England through the medium of the race-horse.

This description, with the exception of the cries, might have formed part of the record of a modern race at Epsom in the columns of a morning paper; so national is the English sport of horse-racing, and so unchanged are its characteristics in all but the existing gambling system, which has been incorporated with the efforts of the noble animal to reach the goal first.

The Crusades now followed; yet, though the opportunities of improving the English breed was necessarily great, from the facilities with which the finest Oriental horses might have been obtained, no advantage seems to have been taken of them. A gloomy and superstitious fanaticism solely occupied the minds of the warriors, and to this all useful purposes were sacrificed; the English horses were none the better for their experience, though they must frequently have felt the superiority of the Oriental breed in actual warfare.

King John paid great attention to the improvement of horses for agricultural purposes, and to him we are indebted for the origin of our draught-horses. He chiefly imported Flemish horses, and such was his anxiety to possess the finest stock from these, that he would accept strong horses as rent for Crown lands, and as fines for the renewal of leases. His personal stud was both numerous and excellent.

Edward III. was the first among our monarchs who thought the subject worthy of serious attention. He was a zealous patron of the course, and in his reign English horse-breeders began to cross the heavy native breed with horses of a lighter structure and greater speed. The king himself purchased a considerable number of Spanish horses, the offspring of the Arabs, which had been introduced into their country by the Moors. The effort was eminently successful,

for the English horse soon began to be valued in other countries, and its exportation from our own shores was prohibited under considerable penalties.

Such was the importance which this monarch attached to the Spanish breed, that he gave a thousand marks for fifty horses, negotiating at the same time with the kings of France and Spain for their safe passage by land. They all arrived safely, at a cost of thirteen pounds, six shillings and eight pence each; equal to a hundred and sixty pounds of modern money. Edward was also an eminent example to many stud-owners in our day, viz., by going deeply in debt for his horses; he having been at one time indebted to the Count of Hainault in no less a sum than twenty-five thousand pounds. The price of a *running horse* in his day was three pounds six shillings and eightpence—though we scarcely know what was the true meaning of a running horse—probably a hackney. Edward was very jealous as to the quality of English horses. A German dealer had imported some which did not come up to the monarch's standard, and yet he would not allow him to re-export them, without a stipulation that he would not take them to Scotland!

Richard II. and the Henries were equally anxious for the further improvement of the breed of English horses.

Races were now regularly established in various parts of the kingdom, and their regulation became a favorite object with the higher classes, as the race itself was the favorite recreation of the common people. The earliest among the regularly established race-courses were at Chester and Stamford. But there was, at that time, no recognized breed of running horses; all sorts were mingled together, none being excluded. It was not until the last year of James I., that rules and regulations as to the quality of the horses permitted to enter were established, and from that period may date the commencement of the present system of racing.

In the reign of Henry VII. horses had become so numerous as to be pastured over the waste lands by the common people. Exportation was still forbidden, except in the case of mares. In the reign of Henry VIII. much attention was given to breeding powerful horses, and statutes were enacted which fixed the proportions of size and mold of horses and mares which should be bred from. The thirty-second of Henry VIII. enacts, that no person shall, upon any common or waste, keep a stallion under fifteen hands; and if that any person find such a horse, he may, on satisfying the constable of the next town that the horse is under standard, keep him

for his own use. Such foals, fillies, or mares, as were not considered able to bear foals of reasonable stature were, by the same act, to be killed and buried.

There is no doubt but that these statutes, harsh as they were, laid the foundation of the excellent breeds now common in England. Henry VIII. was every inch a horseman, and he delighted especially in everything regarding the noble animal. He compelled the nobility, gentry, and higher orders of the clergy, to keep a number of horses in proportion to their rank. During the reign of Henry VIII. an annual race was run at Chester, but the year when it first took place is not known.

In the reign of Edward VI. horse statutes became actually ferocious. To steal a horse was visited with death without privilege of clergy.

To James I. the improvement of English horses owes much, for it was he who first ventured upon that grand improvement in breeding, the introduction of horses from eastern countries, from which the fame of their horses had gone forth from time immemorial. He purchased an Arabian horse from a merchant named Markham, and gave for it the enormous price, according to the value of money at that period, of £500. This horse, however, on trial, was found deficient in speed, and the Duke of Newcastle, who then managed the sporting affairs of the king, took a dislike to the horse on this account; no one had sufficient courage to demand that his breed should be put to the test; and for the greater part of a century, the Arabian breed sank into disuse, and almost into contempt.

The only annual race established prior to the reign of James I. was that at Chester; meetings were now held in Yorkshire, at Newmarket, at Croydon, and at Theobald's, on Enfield Chase. Training the horses came into vogue, a ceremony which no doubt created intense interest with those who engaged in the pursuit. The practice of weighing the jockeys was also adopted, and the pedigrees of the horses which acquired fame became a subject of attention, an example in all probability borrowed from the Arabs. Those which gave proof of superior speed were selected to breed from, and the produce was devoted principally to racing. The genealogy of our present stock cannot be traced to so early a date, yet it is probable some of that blood was continued in strains which will be hereafter noticed.

During the protectorate of Cromwell, a southeastern horse, the beautiful WHITE TURK, was introduced. The ad-

vantages of the breed again became perceptible, and he was soon followed by the Helmsley Turk, the Morocco barb, and by a variety of horses of similar descent. Thus, a beauty of form, and a degree of speed and stoutness, to which an approach had scarcely been observed in the original breeds, was obtained.

On the Restoration, Charles II. gave every possible encouragement to horsemanship. He established races on Datchet Mead, and often attended the newly-established course at Newmarket, entering his own horses. The racing cup was now substituted for the bell, the old prize, and the example of the king raised the course to a splendor before unknown.

This king, to whom we are in a great measure indebted for the introduction of the present strains of foreign blood, sent his master of the horse abroad to procure a number of foreign horses and mares; the latter, which were brought over by him, were called the royal mares, from one of which in the maternal line the genealogy of Eclipse is traced. The pedigree of his sire, Marske, is somewhat obscure; it goes back through eight generations to a daughter of Bustler; but how her dam was bred there is no authority. It may be conjectured that she was descended from some of the worthies which distinguished themselves on the course in the reign of James I. There are several examples of a similar nature traceable in the stud-book, which lead to the conclusion, that during the early periods of breeding for the turf, mares used for ordinary purposes were occasionally selected in case they evinced speed and stoutness, without reference to their Oriental pedigree. The pedigree of Highflyer affords a similar instance to that of Eclipse, and, singular to relate, runs into precisely the same strain of blood. On his dam's side he can be traced to a royal mare; but in the paternal line his genealogy terminates in a mare which produced a filly from Bustler, which horse was a son of the Helmsley Turk. Although there are scarcely any horses on the turf at the present day which are not in some degree descended from the royal mares, it appears too much to assert that they all owe their origin entirely to Eastern blood. The casuist may, therefore, with consistency inquire, What is a thorough-bred horse? The term is accepted conventionally to signify a horse whose pedigree can be traced through many generations, the members of which have signalized themselves on the turf, or have established their reputation as progenitors of superior horses.



"Having indulged in a few preliminary canters" with the coursers of the earlier ages, to the era of James II., we will now draw near to the starting-post, from which we can gain more extensive and authentic information concerning pedigrees and performances, and thereby more satisfactorily trace the progress which has been made in racing, and breeding for that purpose. William III., endowed with an ardent desire to gain popularity by patronizing the tastes and fashions of his people, became a decided patron of racing.

The principal ancestors of our earliest race-horses were the Byerley Turk, ridden by Captain Byerley, as a charger, in Ireland, about the year 1689. The Darley Arabian, in force about 1712. Curwen's Barb, a contemporary; and the Godolphin Arabian, which celebrated sire died in the year 1753, supposed to be in his twenty-ninth year. It is a moot point whether he was an Arabian or a Barb, but, however doubtful the land of his birth, it is an unquestionable fact that there are very few horses of distinction without a cross of the Godolphin Arabian: to him and the royal mares the highest honors are due.

As it is evident that our thorough-bred horses owe their descent principally from Arabian, or other Eastern ancestors, Barbs, or Turks, in theory it would appear that parents of the same blood would produce stock of the highest value, and the opinion has been very earnestly expressed that the introduction of Arabian sires is absolutely required to infuse vigor, constitution, stoutness, and endurance into the race-horses of the present day. Practical experience confutes the argument, and the reasons will become quite obvious when the invariable unsuccessful examples of modern times are brought forward. During the present century several Arabians have been imported for the purpose of breeding, and their stock has been found worthless compared with that which, in the course of years, has become, so to speak, indigenous to the country. With the exception of one mare called Fair Ellen, an offspring of the Wellesley Arabian, none have evinced even common pretensions to racing superiority; and here it must be observed, that although the last-named horse came from the East, his Arabian ancestry, like that of many others, is disputed. Within the last twenty years several horses, stated to have been of the pure blood of the desert, have been brought to England and started for various races, but they have been invariably beaten, although the leveling power in turf calculations,—a vast concession of weight has,

in every instance, been accorded to them. So great is the superiority of the present breed of English race-horses over those of Eastern extract, that no reasonable weight will equalize their powers at the winning-post.

Queen Anne patronized the turf extensively by running horses, and also by annual presentations of gold cups, valued one hundred guineas each, to be run for at York. George II continued the example of his royal predecessor in the presentation of cups, and in his reign the first royal *plate* is mentioned as having been won at Black Hambleton, in 1716, by Brocklesby Betty, a mare at that time in high reputation. Racing, and consequently the stimulus to breed horses for that purpose, when in its infancy, received a gracious impetus by the presentation of royal plates. During the eighteenth century the breeding of horses for the turf seems to have been generally confined to the nobility and gentry of wealth. The fame of favorite progenitors was a powerful stimulant with them, and the desire to breed good horses more than the love of gain predominated. The pursuit has now, with few exceptions, become an object of speculation, and persons of all classes who keep studs do so with a view to profit. Still the same good intention is accomplished, and much more extensively. At the lowest computation there are more than five times the number of horses bred at the present period than there were in the corresponding year of the last century. Every breeder endeavors to produce the best horses—it is his ambition and his interest to do so.

There were in those days but few mares devoted to the stud. A few peculiarities of character, incidents, and ~~events~~ connected with some of them are worthy of notice, from the examples they afford in the occult science of breeding: Black, for instance, bred by the Duke of Rutland, distinguished herself on the course, but did not prove a good brood mare; none of her descendants were of any worth, and her family is extinct. Her running was so very superior that it deserves to be described: at three years old she beat a six-year old horse at even weights four miles; the following year, for the king's cup at Hambleton for five-year old mares, four miles, without any allowance for her age, she beat a field of thirty, being the greatest number of horses that had been known to start for a race in those days, or indeed for a long time afterwards. She won the cup again at the same place when five years old, beating a field of fifteen; also a cup at Newmarket, beating thirteen competitors. To account for the inferiority of her progeny it

must be observed that her dam was by a Persian horse; blood which does not appear to have been valued even in those early days. It was reserved for Mr. Darley to introduce a horse which became a worthy progenitor of the best blood of the present day. This gentleman had always thought that the Arabian purchased from Mr. Markham had not been fairly treated, and, anxious to renew the experiment, he commissioned his brother, then in the East, to procure another Arabian of promise and send him to England. The commission was carefully executed, and a horse was met with which was bred in the desert. On his arrival the beauty of his symmetry was immediately recognized, for it embraced every point that could be desired in a race-horse. From this horse is descended a vast number of the most celebrated racers, and at the present period there is scarcely one which does not possess some of his blood. The most celebrated of his immediate offspring were the Devonshire or Flying Childers, and Bartletts Childers, a horse which was never trained, but his superiority in the stud is well known. The wonderful tales which have been related concerning Flying Childers, like the snowball, have increased in their progress, therefore a brief digression is necessary to unfold these romantic conceptions. It is related that he gave Fox twelve pounds over the Beacon course at Newmarket, and beat him a quarter of a mile in a trial. Every racing man would naturally inquire if Fox could not have got nearer at the end, and few indeed place much reliance on trials without substantial evidence to corroborate reports. It is also said that he ran a trial against Almanzor and the Duke of Rutland's Brown Betty, nine stone two pounds each, over the round course at Newmarket, three miles six furlongs and ninety-three yards, which distance, according to many accounts in print, "he ran in six minutes and forty seconds, to perform which he must have moved at the rate of *eighty-two feet and a-half* in one second of time, or nearly at the rate of *one mile in a minute*." The inaccuracy of this is patent. If a horse moved at the rate described, he would get over the distance in a trifle less than four minutes and a half. No horse that ever was foaled ever went at the pace spoken of. The rate of fifty feet in a second is very great, and more than the average pace required to run the distance of the Beacon course, four miles one furlong and one hundred and thirty yards, in seven minutes and a half, which Childers is also reported to have done. After all the high-flown panegyrics concerning the racing exploits of this horse,

in public—the only trials worthy of credence—they were confined to the winning of two matches, for the first of which, at six years old, carrying eight stone five pounds each, he beat Speedwell, a gelding of equivocal celebrity (the distance was four miles); for the second, when seven years old, he beat Chanter, twelve years old, six miles. He was engaged in three other matches, for which he received forfeit. It is related that he was at first used as a hunter, and that he was headstrong and vicious. He was the property of the Duke of Devonshire, who bought him when young, from Mr. Childers, whence his name. He died in the Duke's stud, at the age of twenty-six years. These observations are not intended to detract from his excellence in the stud, but to confute the marvelous tales which seem to excite the wonder and admiration of the uninitiated, while among experienced turfites they attain no credence. Bartlett's Childers, another son of the Darley Arabian, was never trained to the course, but his symmetry sufficiently spoke for itself. A great many of the first horses of the day owned him for their sire, and the two Childers were soon acknowledged for their superiority in the stud.

As a worthy scion of the latter stands his great-grandson, the celebrated Eclipse, of whose speed no correct estimate was formed; for, although he contended with some of the best horses of his day, he never met with an opponent sufficiently fleet to put his powers to the test. He was soon withdrawn from the turf, and became the sire of one hundred and thirty-four winners, who brought their owners more than £160,000 exclusive of cups. He was bred by the Duke of Cumberland, and owed his name to his having been foaled during the great eclipse of 1764. At the sale of the Duke's stud, he was bought for seventy-five guineas. Eclipse was five years old before he was brought on the turf, his first race being for the maiden plate at Epsom. His powers were at once seen, and in his next race, at York, twenty guineas to one were betted on him. During the race this increased to a hundred guineas to one. At the end of the first two miles he was a distance before his competitors, and won with the greatest ease.

In 1769 a Mr. O'Kelly became his proprietor, for sixteen hundred and fifty guineas. In 1779 one of the Bedford family asked his price; O'Kelly replied, that "all Bedford Level would not purchase him." From another person he asked £25,000 down, and an annuity of £500 for life. O'Kelly cleared £25,000 by him.

Eclipse won eleven king's plates, in ten of which he carried twelve stone, and in the other ten. In running he had a vast stride, and his hind legs were so spread "that a wheelbarrow might have been driven between them." The points of this horse most useful to the breeder were, the curve of his head, the slant, extent, and substance of his shoulders, the length of his waist, and breadth of loins, the extent of his quarters, and the length and substance of his thighs and forearms. He died in 1789, aged twenty-six years. His heart weighed fourteen pounds.

KING HEROD was another famous racer, whose blood is much valued at the present day. He was a descendant of Flying Childers, was the sire of no less than four hundred and ninety-seven winners, which gained for their proprietors upwards of £200,000. He was not brought on the turf till five years old. His forte was stoutness or bottom, and with physical powers which enabled him to carry weight. He was, however, beaten twice out of five races at Newmarket. He was the sire of many celebrated horses. King Herod died in 1780, at twenty-one years of age.

Several horses of high character were foaled towards the end of the last century, the most conspicuous of which were Sir Peter Teazle, bred by the Earl of Derby; Gohanna, by the Earl of Egremont; Haphazard, by Lord Darlington; Beningborough and Hambletonian, by Mr. Hutchinson; Dick Andrews, by Mr. Lord.

Many very celebrated horses are descended from Orville, among which stand foremost in review his son Emilius, and his grandson Priam, both Derby winners. The latter horse was sold to go to America, but not before he had left traces of his sterling worth. He was the sire of Miss Letty, Industry, and Crucifix, each of them winners of the Oaks. Cosack and Hero also claim alliance to him. The celebrated mare, Alice Hawthorn, and the dams of Voltigeur and Frantic, possess the Orville blood, to which a numerous family may be added by reference to the stud-book.

## CHAPTER III.

## VARIETIES OF HORSES.—THE RACE-HORSE.

THE English and American race-horse is undoubtedly the finest animal of his species in the world. In swiftness and energy he surpasses even his Arabian progenitor, though on the burning sands of the desert, to which not being acclimated, he might not be equal in point of endurance. He is always distinguished by the beautiful head of the class from which his ancestors sprung; this being as finely set on a neck of faultless contour. His oblique shoulders give as good earnest of strength, as do his well-formed hind-legs of speed. By the sculptor, perhaps, the leg from the knee downward might be pronounced unfit for the *beau ideal* of a perfect animal, yet this, though admitted by judges to be sometimes the case, is, after all, a matter of little consequence. Certain it is, that whenever these race-horses have contended on fair grounds with the finest Arabian breeds, he has invariably come off conqueror, even although he may be by no means the finest specimen of his own class.

The history of the racing-colt in the present day has in it much that is interesting. The first six months of the racer are usually spent happily enough; he is with his dam, well sheltered, well fed, and every want anticipated, in order that his frame and his powers may be fully developed in the least possible time. Then comes the spirit of curiosity and of speculation; the owner is anxious to know whether his stock will be worth the expense of keeping, and they are prepared for being broken-in soon after they have attained the age of twelve months: the mouth is begun to be formed, and before the succeeding autumn has closed in, they are under the care of the training-groom.

The system of management is much improved. The training-groom possesses more real knowledge of his business, and there is far more humanity exercised than there used to be. In a very great proportion of the training-stables the full exertion of the power and speed of the colt is oftener obtained by kind usage than by brutal cruelty.

By and by comes the day of trial. The course is a short one, usually half a mile, but their fleetness and their strength

are put fully to the test. This is occasionally repeated, in order that the trainer or the owner may be put in full possession of the powers and promise of the animal. At two years old the course is sometimes lengthened to three-quarters of a mile, and the speed is again fully tested.

At the first glance there appears to be some indiscretion in this; but the system must be examined. It must be inquired whether it is not wrong to call thus severely on the power of any animal before the period at which its strength is developed; and whether the horse so treated can attain the state of perfection for which he was designed. He may exhibit strength and speed extraordinary for his age, but is he able to sustain the reputation that he acquires? His bones not having acquired the proper strength, and the muscles not having attained their full power, is it not reasonable to expect that at no remote period he may deceive his backers, and be publicly disgraced; or is it seen that he gets old, although not arrived at the pride of youth, and is he withdrawn from the course?

It must be conceded, that if another year were granted, and the general date of the appearance of the young horse on the course were three years instead of two, the spirit of sheer gambling would be somewhat curtailed, many a good horse would be saved from the sad fate of those that are cast, and the owner would rarely be out of pocket.

On a fair view of the turf, however, there is considerably less cruelty exercised than there was years ago. The training for, and the running of the four-mile courses, was accompanied by a great deal of barbarity. The number of those which die in the training, or in the running, is materially diminished. There are numerous accounts of the horse dropping and dying in contesting the four-mile course, and sometimes there were more outrageous heats than these. The starting-post of the *six-mile* course once stood near Six-mile Bottom at Newmarket. The horses are not so much punished in their running as they used to be. No jockey of the present day would disgrace himself by the atrocities that were formerly committed. It is now understood that, when a horse is exerting the utmost extent of his stride, and is straining every muscle and every limb from a natural principle of emulation, the working of the bit, or the moderate application of the whip or spur, may keep him up to the mark; but when he has wound up "each corporeal agent to the terrible feat," the infliction of sudden torture will necessarily disturb the harmony of action, and throw the animal quite

abroad. Many a race has been lost by the infliction of wanton cruelty. A bad-tempered horse immediately *shuts up*. He is sure to abate or lessen his exertion if he is severely punished when doing his best. The owner or the jockey will, however, be the best judge of the proper manner of riding in particular cases.

#### THE HUNTER.

The hunter used chiefly to differ from the road-horse in standing an inch or two higher, and possessing more blood. He was at least three-quarters bred, with small head and thick neck, and therefore light in the hand; the crest firm and arched, the jaws wide, and consequently the head well set on, and the mouth light and pleasant. The forehead was higher than that of a racer, and although the shoulder was somewhat thicker, the saddle was in its proper place. The barrel was rounder than that of the race-horse, that there might be more room for the lungs to play when the pace was becoming distressing; the leg was shorter and deeper; the pastern shorter, yet retaining considerable obliquity; and the foot sound; the body short and compact, the loins broad, the quarters long, the thighs muscular, and the hock well bent and well under the horse. This was the hunter of former days, that would carry his master to the covert side, and keep his place in the field during a run of two or even four hours, and find his way home again unhurt and not over-tired.

It is not every good and fleet horse which will make a good hunter. He may have strength and vigor for a long journey, and yet not be able to bear the shocks and strainings of the chase. There never was, says Captain Brown, a long limber-legged horse that was able to gallop down steep hills, and take bold leaps with a weight on his back, without sinking or foundering.

A horse should never be used for field-sport till he is in his sixth year, as his joints will not be well knit, nor his tendons sufficiently tenacious, till that period. A horse in his fifth year may occasionally be ridden out with the hounds, but if he is only moderately worked till the following year, so much the better.

It is now, however, the fashion to breed the hunter chiefly for speed; he therefore is a very different kind of horse from what he was. He is the race-horse somewhat more stoutly bred. The hunter of the present day is comparatively seldom ridden to cover; a hack conveys the sportsman, and a second



horse is provided, entrusted to some groom who knows the country, and brings him to the spot where he is most likely to meet the hounds during the chase, which may be then generally prolonged without distress to either horse.

The spare horse, however, is not always forthcoming when wanted, for the chase may have taken a contrary direction to that which was expected. Then comes a duty of which the horse will not remind the rider until his strength is rapidly wasting, although the attentive and humane sportsman can scarcely overlook it. His action becomes feeble, the flanks heave convulsively—there is a peculiar convulsive action of the diaphragm. These will be sufficient indications of distress, and no horse should be urged on after he has unequivocally exhibited them. It would be an act of injustice and cruelty for which no excuse can be urged. The administration of some restorative, and leading slow to the nearest stable, are the best alternatives at the moment of distress.

The training of the hunter for this work is a simple affair. It is, by means of exercise and of physic, getting rid of all superfluous fat and flesh, without debilitating him. The physic is useful, in moderate doses; but the chief thing is gradually to accustom him to the exertion of every power that he possesses, without too much hurrying his breathing, or overstraining him.

The training of the race-horse is of a similar character with that of the hunter, but it is far more severe, for his strength, his speed, and his endurance, must be tested to the utmost. The hunter has to carry his rider gallantly and well through perhaps a long burst, and if he tires, and the sportsman has the good sense and humanity to cease to urge him on, the greatest evil is some temporary suffering to him, and disappointment to his master; but if the race-horse breaks down, or if his capabilities have not been accurately calculated, the most serious loss may be sustained. Thence arises the necessity of testing every power in the preparation of the race-horse; and thence, too, it sometimes happens from injudicious management, that young horses break down and become perfectly useless in their training.

#### THE SADDLE-HORSE.

In point of real utility this is the most valuable of the species, and it is difficult to be met with in perfection, which, of course, includes cheapness as well as ease and safety of

action. Many faults may be tolerated in the racer or hunter, but if the former have speed, and the latter bottom, this may be overlooked in consequence of the animal being otherwise well adapted to the purpose for which he is intended. The racer is frequently vicious, and the hunter scarcely less so—both perhaps from injudicious or cruel treatment; but next to safety, it is requisite that the hackney should be quiet and docile, always ready to identify his movements with those of the rider, whether he be in action or standing still waiting the transaction of his owner's business. By kind treatment a horse acquires a knowledge of his owner's movements almost as readily as a dog, and is as ready to acquiesce in them; so that his teaching in this respect devolves on his owner, as much for his own interest as for the perfection of his horse.

The degree of substance which the saddle-horse should possess must depend upon the weight he has to carry, and the consequent degree of exertion required of him. A country, the surface of which is irregular or hilly, will require strength and action as primary requisites before speed, or at least to be combined with it. It is no doubt agreeable to possess a splendid horse; but it is questionable whether his services will be superior to those of one of less pretensions. It is by no means essential that he should carry his legs too high, so that he goes clear over the ground. The height of the hackney should be from fourteen hands and a half to fifteen hands and an inch, having a body of a compact form, with his joints well knit.

The head of the saddle-horse should be small, and the neck inclining to be thin towards the head. The head will be then well set on, and it will form that angle with the neck which will give a light and pleasant mouth. This, however, depends much on the rider, who, if he do not feel his mouth lightly, may easily spoil its sensibility to a light touch, and may entail upon himself a great deal of unpleasant attention to his horse's movements. The animal, when well managed, is accustomed to depend on his rider for his guidance, and if the rider have not as much sensibility of touch in his hand as his horse has in his mouth, he is not in a situation to give him an immediate check, so as to prevent accident to either. Besides which, a light touch always gives a graceful position to the horse's head, and is eminently conducive towards ease and safety of action.

The shoulders of the saddle-horse, compared with those of the racer, or even with those of the hunter, should have a little more substance or thickness, and they should slope

backwards at a considerable angle from the point of the shoulders to the withers—at which point there should be an evident degree of thinness and elevation. A well-shouldered saddle-horse will, when standing, have his forelegs perpendicular to the ground. Hence, it is essential to judge of the animal as well when standing as moving. Observe also, when walking, whether he place his forefoot more forward than the shoulder-point, when he puts it on the ground. If his shoulders are upright he cannot do so; and if this be not the case, he will always do so, and should be rejected, as not having a sound footing when in motion.

He should have the bones beneath the knee broad and flat, as much so immediately under the knee as they are above the fetlock. The forelegs should be perfectly straight, for a horse which stands over on his knee, although but to a slight degree, will, from many a trifling cause, especially if overweighted, be liable to fall. The arms, too, should be compact and muscular, exhibiting considerable bulk in proportion to the height of the horse.

The foot is of the first importance. In a few words, it should be of a size evidently corresponding with the general bulk of the animal. The feet should neither be too hollow—showing a tendency to contraction—nor too flat, the consequence of disease, exposing the sole to continual bruises.

As his general safety of action may be judged of by his shoulders, so may his soundness be estimated by his legs and feet. The foot should be open at the heels, and free from corns and thrushes.

The pasterns should be so united at the fetlock that the feet may neither turn inwards nor outwards. Of the two faults it is better that the feet should turn a little outwards, so that they do not strike against his fetlock, than that they should turn inwards. The pastern should be short, with sufficient obliquity to give pleasant action, but not enough to render the horse incapable of the wear and tear of constant hard work.

The last test is to mount him, first looking if his shoe is unnecessarily worn at the toe. If he put his feet flat on the ground he is worth having; if he do not so place them, but drive his toe into the ground, reject him, for the odds are, that before long the rider will have to measure his length on the ground, as the least obstacle will cause the horse to trip. The condition of the shoe is, however, a pretty good criterion of this. If the toe be greatly worn, whilst the heel is not

worn at all, a judgment may be formed that the horse will be unsafe.

The saddle-horse is most valuable for the pleasantness of his paces, his safety, good temper, and endurance. If he is equal to eight or ten miles an hour, the owner should be satisfied. Horses that have extraordinary fleetness on the road are not always pleasant to ride, and it is their too usual fate to be disabled, and comparatively worthless, when the slower horse is in his prime.

The early life of this horse perhaps differs a little from that of the farmer's horse: he is better taken care of during the first winter; he has a hovel in which he may shelter himself, and has an allowance of hay, and perhaps of corn. The winter passes away, and he has suffered little; and during the early part of the year he gets his new coat, and is full of spirits and vigor. In the third year comes the breaking-in; and, with occasional exceptions, he suffers not much from the ignorance and brutality of the breakers. The exceptions to this, although they may be comparatively few and far between, should not be suffered for one moment to exist. He is destined for the immediate service of the master, and much of his after-character, and the pleasure derived from him, depend upon the manner in which the breaking is performed. There is, as in the inferior horse, one thing absolutely indispensable—that the colt, previously almost as free as the air, must be taught to yield up his will to another, and to obey with alacrity his master's bidding. Generally speaking, this is easily accomplished. It demands only a certain degree of firmness, mingled with kindness, and this task is, in the majority of cases, readily accomplished. If the animal is at the first somewhat disposed to resist, mingled firmness and kindness will rarely fail to obtain a victory.

The faults which will oftenest require correction in the hackney are fear and restiveness.

Gentle treatment will rarely or never fail to overcome fear. The disinclination of the colt to come into contact with the object should be quietly but firmly resisted, and then, by succeeding in persuading him that there is no ground of alarm, an unpleasant and dangerous habit is broken at once. The pretended fear which the colt will occasionally exhibit is a species of affectation that may be as readily, and must be very determinedly, resisted. The quadruped has occasionally as much affectation as the human being, and it is fortunate for him, as well as his owner, when this is put down with all possible promptness.

Restiveness is defined, by the author of a recent work on "Humanity to Brutes," to be "a compound of mischievousness and stubbornness, the will of the horse being directly opposed to that of the rider." "Now," says this writer, "the most zealous advocate for the humane treatment of animals will readily admit that the man must be master and the quadruped must obey. The only question is as to the means of enforcing obedience. Correction may occasionally be necessary, but the grand secret is to foil the horse with his own weapons. If severity is resorted to, it should not be until all other means have failed. There should be no trial of strength between the biped and the quadruped, for that will probably again and again terminate in a drawn battle which will be renewed on the first opportunity. The horse may fret and exhaust himself, but the rider must be quiet. If he will stand still, he should do so until he is tired, or he should be made to walk backwards. If he endeavors to turn round, he should be made to accomplish a whole instead of a half circle, so that he shall be precisely where he was before. Nineteen horses out of twenty will soon be convinced of the inutility of a struggle like this, and after having repeated the experiment two or three times, with precisely the same result, will submit, and become useful and attached servants. If, however, he continues a brute, he must be got rid of, or proper coercion must be applied."

#### THE COACH-HORSE.

The better kind are the Cleveland bays, mostly bred in the country, between Northumberland and Lincoln, and particularly about Cleveland and the vale of Pickering. The Cleveland mares, at least those that have been kept for breeding purposes, have materially improved within the last thirty or forty years. They are taller, with better withers, yet sufficient roundness of the barrel, and flatter and deeper legs. These mares are crossed by a three-part bred horse, or sometimes by a thorough-bred one, that has sufficient substance and height, arched crest, and high action. The foal is either the tall coach-horse—the true Cleveland bay—or he is the four-in-hand, or currie-horse, or sometimes the hunter, and of the best description, or the better kind of saddle-horse. If the sire is only half-bred, we have the post-chaise or coach-horse, the hackney, and the horse of common work—the worst of mongrels.

Dealers at the proper season attend the fairs in this dis-

strict, and every part of the kingdom is thence supplied with horses for show, and to a great degree, for usefulness. Even the royal stables thence obtain some of their chiefest ornaments.

The produce of Cleveland mares is a coach-horse of high repute, and likely to possess good action. His points are, substance well placed, deep and well-proportioned body, strong, and clean bone under the knee, open, sound, and tough feet, with fine knee-action, lifting his feet high. The full-sized coach-horse is in fact an overgrown hunter.

The old Cleveland horse is almost extinct, and his place supplied in the manner just described. The Suffolk Punch, the product chiefly of Suffolk and some of the neighboring districts, is regenerated, but is a different sort of animal to the breed of olden times. He usually varied from fifteen to sixteen hands in height, and was of a sorrel color. He was large headed, low-shouldered, broad and low on the withers, deep and yet round chested; long in the back, large and strong in the quarters, round in the legs, and strong in the pasterns. He would throw his whole weight into the collar, and had sufficient hardihood and strength to stand a long day's work. The pure breed has, however, passed away, and is succeeded by a cross between the half or three-parts bred Yorkshire with the old Suffolk. He is taller than the former horse, somewhat higher and firmer about the shoulders, with sufficient quickness of action and honesty to exert himself to the utmost at a dead pull, whilst the proportion of the withers enables him to throw immense weight into the collar. The encouragement given by the Royal Agricultural Society of England for horses of this class has been the cause of considerable increase in their numbers.

Another breed is the heavy draught-horse, found usually in the line of country from Lincolnshire to Staffordshire. These are often purchased by the Berkshire and Surrey farmers at two years old, worked moderately until they are four—earning their keep during the whole of the time—and then sent to the London market at a considerable profit.

A dray-horse should have a broad chest, thick and upright shoulders, a low forehead, a deep and round frame, the loins broad and high, the forearms and thighs thick, the legs short, the hoofs round, the heels broad, and the sole not too flat. The largest of these horses are used as dray-horses, the next as wagon-horses, and a smaller variety, with more blood, is employed by the undertaker. The larger ones—the dray-horses of the metropolitan and other brewers—are

adapted more for parade, and shown more to gratify the ambition which one brewer has to outvie his brethern, than for any peculiar utility. They are certainly enormous animals; but they eat their full share of provender, and in hard and continued work they would be comparatively beaten by an equal number of hardy muscular horses much lower in stature.

Until the establishment of the railroads, the stage-coach horse stood high in point of utility and value. In conducting a racing establishment, it would soon be perceived what colts would train on, and what would ultimately break down; and, except there is much neglect in the management of the establishment, the unsound and weak-legged ones were sold, and a considerable proportion of them found their way to the fast coaches. They had the requisite speed, and strength enough to last for a considerable time. A great improvement also, either from fashion or good feeling, took place in the management of the stage-coach horse. He was no longer half-starved, as well as over-driven, but sufficiently fed, and nothing exacted from him but his own proper daily labor, while he was always fully equal to, or above, his work. The consequence of this was, that he required little urging forward by the torture of the whip; and there was a marked change in point of humanity in the conduct and character of the driver. Every one accustomed to travel in the public carriages will cheerfully and thankfully acknowledge the improvement that had taken place in this respect.

The length of the stages were materially diminished; and the proprietors having one horse in four always at rest, each of them had the advantage of one rest day in four. Nimrod, a competent judge in these matters, has asserted, in his amusing work on "The Chase, the Turf, and the Road," that "no animal toiling solely for the profit of man leads so easy and comfortable a life as the stage-coach horse. He is sumptuously fed and kindly treated; he has twenty-three hours in twenty-four of rest. He is, except from his own fault, almost a stranger to the lash; we rarely see him with a broken skin; but we do often see him kicking up his heels when taken from his work, after having performed his stage of ten miles within the hour."

This pleasing picture, however, too frequently had its shades. The system of over-working and over-feeding, to which the horse was subject when he came on the road, was undermining his constitution; every disease in him took an inflammatory character; his legs were peculiarly liable to

accident, and strains and other evils frequently occurred, which required a peculiarly severe mode of treatment, and the horse was unavoidably made to suffer dreadfully. Perhaps the evil was never perfectly remedied. The animal was never competent to undertake his former work; but he was attached to the heavier coaches, or transplanted to those concerns of atrocious cruelty, the night coaches. Then commenced that loss of character, and diminution of usefulness, and increase of misery, which were the fate of thousands of horses every year. This is a picture of the stage-coach horse on the bad roads, and under indifferent management.

Railroads have now been introduced in almost every direction, and the quickness and economy of the journey have, in many parts of the country, comparatively destroyed the business of the postmaster. The horses passed into other hands, and sank to more degrading and painful labors; but of late their sky is again somewhat brightening. The exportation of horses of this class to the Continent has increased to a degree that never could have been anticipated. These horses are destined for the cavalry service of different countries; they are such as could not be procured on the Continent; and the work that will be exacted from them will not, in the majority of instances, ever develop their latent imperfections.

Of the sad cruelties practiced on the hackney-coach horses, on the day and night cab-horses, and on those that belong to the costermonger and inferior tradesmen, nothing is here recorded; but if the dog, a beast of draught in so many other countries, is—we scarcely know why—not allowed to be employed in this occupation, there ought to be some strong enactments to protect those poor old debilitated, half-starved animals on whom the whole labor falls.

There is only space for a few remarks on some of the smaller breeds of horses.

#### THE GALLOWAY.

The Galloway derives its name from the district in which it is bred, in the south of Scotland.

The true Galloway is now seldom met with. It was destroyed in the fruitless attempt to increase the size of the animal, and to retain all its peculiar good qualities as a pony. The small horses that are sold under the name of Galloways, are mostly from Wales or the New Forest, and still retain many of the good qualities belonging to Merlin and to Old



**Marske.** The Welsh pony is often a beautiful animal, and can scarcely be tired. The New Forest evinces the source whence he sprung, by his spirit, speed, and endurance.

The Exmore ponies are far from being so handsome as the Welsh, but they are hardy and useful. The Dartmoor ponies are still more deficient in beauty of form, but well suited to the country in which they are bred.

The Highland pony partakes of all the hardihood of the others, but is slower and somewhat unpleasant in his paces. The Shetlander is the most beautiful of the inhabitants of the northern islands, although of a very diminutive size, varying from seven and a half to nine and a half hands in height. He has a small head, a good-tempered countenance, and a short neck becoming gradually fine upwards. The shoulders are low and thick, the back short, the quarters expanded and powerful, the legs flat and fine, and the foot retains its natural form even in old age.

#### THE CART-HORSE.

Although we have incidentally spoken of one or two varieties of the draught-horse, our volume would not be complete did we not enter more particularly into a description of agricultural horses. The cart-horse varies in almost every county, but one particular characteristic is, or should be, activity, in conjunction with such a degree of weight as will give them more physical power in draught.

The cart-horse should not be more than sixteen hands high, with light, well-shaped head and neck, short ears, full chest, large shoulders, low in front, the rump being higher than the forehead, back strong and compact, legs short and flat, fillets large, and pliable in the joints.

For heavy wagon draught the horses should be large, provided the size arises from build, and not from flesh alone, which they will be if fed on sloppy meat—this increasing the cellular and adipose matter, without nourishing the muscular fibre.

The object of breeding draught-horses is to increase strength; and this is not best accomplished by increasing size, a compact horse of fifteen and a half or sixteen hands high being frequently more powerful than one of seventeen. Cart-horses, when well treated and moderately worked, live to a great age, instances being on record of their reaching forty, though regularly worked every day with younger horses.

European horses which have not Eastern blood in their veins, are widely different in their physical structure from the Asiatic horse. Their bones are round and porous, their joints thick, heads clumsy, bodies bulky, chest fleshy, legs thick, tendons relaxed, hair coarse, and hides spongy. This arises from difference of pasture no less than of breed, the dry pastures of the East being well suited to develop the superior powers of the animal.

#### THE CLYDESDALE HORSE

is met with in most counties north of the Tay, and is a favorite horse in England. These horses are strong, hardy, and steady, yet active. Their stature is from fifteen hands to sixteen hands and a half. As farmer's horses they are superior to most others. The breed is originally from Flanders stallions and Lenark mares, and was formed from the experiments of the Duke of Hamilton.

The Clydesdale horse is lighter than was the old Suffolk Punch, and with as much bone as the latter, is more shapable; his neck is longer, his limbs clean, straight, and sinewy, and his step firm and active. He is capable of great muscular exertion, is good-tempered, and not being unwieldy, is no burden to the soil, and therefore well adapted to the plough.

#### THE FARMER'S HORSE,

Half cart-horse, half saddle, is seldom perfect in both capacities; his paces are slow and stiff, whilst, from depending on the collar to keep him up, he is apt to come down when ridden. The rider, however, being aware of this peculiarity, and not requiring speed, generally contrives to keep him on his legs.

When used for drawing and riding, the farmer's horse should be upwards of fifteen hands high, with a shoulder thicker, lower, and less slanting than the saddle-horse. He should be stout and compact, and if with a little blood, so much the better. He should not be put to the heaviest kind of drawing, so that his weight should not be more than will allow of tolerable speed.

The farmer's horse, ridden occasionally, but more employed for draught, should not be the slow, bulky animal of former times, but a slight degree taller than the road-horse, with his shoulder thicker and less slanting, stout and com-

pact, and having a little, and but a little, of the blood-horse in him. A good judge of the horse has said, and it sums up the character of the animal, that "he should have weight enough to throw into the collar, and sufficient activity to go over the ground." The farmer's horse may not be often over-fed, but he is seldom overworked, and, except in the hay and corn harvest, his employment is easy.

The colors of the horse are very variable, the principal being as follows:—*Bay*, of many shades, but always distinguished by black manes and tails. *Gray*, of seven or eight varieties. *Dun*, of several shades, having for the most part a black list along the spine. *Roan*, is bay, black, or sorrel, intermixed with white hair. *Chestnut*, light or dark. *Piebald*, of two colors, one being white. Besides the colors enumerated, there are many others, as *grissel*, *sorrel*, *cream-color*, *black*, *white*, *fleabitten*, &c., &c.

White and cream-colored horses were formerly much esteemed by persons of high rank. The temper of the horse and his moral qualities vary as much as does his color, but no doubt these qualities are much influenced by his early treatment; yet are good and bad qualities sufficiently hereditary to be guarded against in breeding, and some men even go so far as to state that they are the characteristics of distinct breeds; but for this there is, perhaps, no valid foundation.

#### EARLY TRAINING.

Opinions are divided, whether it is conducive to imperfection in the race-horse to persevere with the prevailing fashion of running them at two years old, and many arguments may be adduced on both sides. Those who are opposed to the practice, contend that the limbs of young animals are not sufficiently matured to sustain the ordeal of training, and that running them at so early an age shortens the period of their services on the turf; moreover, that it is calculated to establish constitutional defects, which they transmit to their progeny. The treatment adopted with young racing stock is such as to create an early maturity of the system, and there can be no doubt that in this important respect vast improvements have been made on the practice of our forefathers.

The supposition that early racing reduces the period of a horse's career on the turf is not established by fact; indeed, there is very conclusive evidence to the contrary, which will be seen on reference to the table of the comparative

performances of ancient and modern horses. Many other examples may be added, but it would be tedious to enumerate them. The "Racing Calendar," and "Ruff's Guide," will support this assertion, convince those who are skeptical, and amuse those who delight in researches of that nature. In favor of the practice it may be observed that the lifetime of a horse is limited, and there is no reason to imagine that the period of his existence is affected by the age at which his services commence. If, therefore, a colt or filly be used for racing at two years old, and continues to run four or five years only, there is the more time to calculate upon the valuable services of either in the stud, than if they were not trained till they had attained the age of five or six years.

Although there are some gentlemen who breed and keep race-horses purely for amusement, there are many persons who keep them with no other view than that of profit, and they compose by far the greater majority; they are essentially a shrewd, calculating class of men, and would not enter into transactions which they do not know to be advantageous to them. It is the breeders and owners of race-horses who encourage the races for young horses, not the public, for the money which is added to those stakes is not proportionate to that which is given for horses of more mature age. The amount which may be gained, irrespective of betting, by winning a two-year-old stake does not generally equal the sum which may be won by a handicap for horses more advanced in years; most men are anxious to know the capabilities of their young horses before they incur great expenses. Whatever patriotic impulses might have instigated breeders of race-horses in the early days of the turf, those motives certainly do not predominate with the present generation; but if the same good object be obtained, the stimulus to breed horses, and that in connection with individual profits, surely no argument can be held in opposition to the conjoined advantages. As it is evidently the interest of breeders to run their horses at an early age, any measures which would discourage the practice would be objectionable and futile; objectionable, because it would operate as a discouragement to breeding horses. If the argument could be established that it predisposes them to disorders, which they entail upon their progeny, that would be a good reason to advance, but such a position cannot be maintained. Take the leg as an example, and that limb is more subservient to the effects of work than any other. Some of the most celebrated horses have naturally a conformation of their fore-legs, which is object-

tionable in appearance, and many of their produce inherit that conformation; but it cannot be traced to the effect of early training, or severe work at any age. Partisan was by no means celebrated for the appearance of his fore-legs, which he doubtless inherited from his grandam Prunella, as most of her descendants possess a similar imperfection. The same might have been traced to Venison, nevertheless his legs were unequivocally sound, otherwise he could not have undergone the very severe racing and constant traveling, which he did at three years old. There are likewise other failings, spavins and curbs, for example, which result from an imperfection in the form of the hocks; these are hereditary imperfections, in which case they will sometimes develop themselves without any exercise, they occasionally proceed from work, and make their appearance on hocks of the most perfect form; but curbs and spavins are by no means so prevalent as they were some five-and-twenty years ago, at which period it was quite the fashion to fire the hocks of young horses, especially those which were intended for hunters, not because they evinced any weakness or apparent defects, but the poor animals were unnecessarily tortured and disfigured for no good purpose. Such absurdities are happily not practiced in these days of enlightenment. Roaring is a disorder which appears to prevail to a considerable extent, and great attention has been devoted to the subject, yet no one has traced its origin to the effects of early training.

Early training does not appear to have produced ill effects on several of our best horses, by incapacitating them from accomplishing their most brilliant performances when they arrived at maturity, indeed most horses of celebrity, although trained at two have continued on the turf till they were six years old. Beeswing won the Doncaster cup when she was seven years old. Both Touchstone and Lanercost won the cups at Ascot when they were six years old. Charles XII. won the Goodwood cups two years in succession, on the latter occasion when he was six years old. St. Francis, when five years old, won the Ascot cup, and Epirus, at the same age, the steward's cup at Goodwood.

## CHAPTER IV.

## CONFORMATION OF THE HORSE.

A VERY general account only can be given of this, for it varies essentially with the breed and destination of the animal. It is not within the scope of this treatise to enter minutely into the anatomical structure of this noble animal. We will, however, take such a general view of it as will be interesting and instructive to the unscientific reader.

In a physical sense, the horse exhibits as high a degree of organization as does a human being. There is the same variety of complex structure, and the same adaptation of means to an end. Without some knowledge of these, an accurate judgment of the capabilities of the animal cannot be arrived at; nor can it be readily understood as to the kind of labor he can perform without injury, and the way in which he should be set to perform that labor. The general structure of the horse consists of a complicated set of levers, *i. e.*, bones, all acting in combination with each other, by means of the ropes, *i. e.* muscles and tendons; and it is of the greatest possible use to know how these act on each other, so that they may never be made to act in any other direction than that intended by nature; any violation of this rule is, as a matter of course, attended with corresponding injury to the animal.

To illustrate this in the familiar instance of draught, this being one of the chief purposes for which the animal was intended. The way in which this is effected is, by the horse throwing his body forward, so as to cause his weight to act upon the load. This act would naturally cause him to fall, but from his advancing the legs in such a manner as to raise the body, and not only to support himself during the effort, but in such a way as will enable him constantly to renew the effort. It is evident that in this motion of the body, there must be a point in which both the weight of the body and the power of the animal's muscles and limbs are concentrated. This point is called the centre of gravity; and if the horse be not harnessed so as to cause this point to act in the most favorable manner upon the load, of course so much of the animal's power is lost as is wasted by pulling in a wrong

direction; or what is still worse, in order to accomplish the object, he is compelled to exert himself injuriously in performing that which a little consideration on the part of his master would otherwise render easy to him. In the same way, if he be harnessed too far from his neck, the centre of gravity will be thrown into a contrary direction to that in which it could most efficiently act; and thus loss of power, and consequently injury from greater exertion, must be the result. In other words, if the direction of the power employed be different to that of the weight to be moved, the power is not used to the best advantage, and the strength of the animal is wasted to no purpose. It is only by an acquaintance with, and a study of the structure of the horse, that we can put him to the best uses; not necessarily a scientific knowledge of his structure, but so far, at least, as to comprehend the nature of the machine—for such the horse is—which we are employing.

There are some points, however, which are valuable in horses of every description. The head should not be disproportionally large, and should be well set on, *i. e.* the lower jaw-bones should be sufficiently far apart to enable the head to form that angle with the neck which gives to it free motion and a graceful carriage, and prevents its bearing too heavy on the hand. The eye should be large and a little prominent, and the eyelid fine and thin. The ear should be small and erect, and quick in motion. The lop-ear indicates dullness or stubbornness; and when it is habitually laid too far back upon the neck, there is frequently a disposition to mischief. The nostril in every breed should be somewhat expanded; it can hardly be too much so in the racer, the hunter, the roadster, and the coach-horse, for the horse breathes only through the nostril, and would be dangerously distressed when much speed is required of him if the nostril could not dilate to admit and to return the air. The neck should be of moderate length. It should be muscular at the base, and gradually become fine as it approaches the head. The withers should be somewhat high in every horse, except perhaps that of heavy draught, and it does not harm him, for there is a larger surface for the attachment of the muscles of the back, and they act with greater mechanical advantage.

The chest is the first point to be looked at, both in point of capacity and form. Without capacity, the lungs of the animal cannot be properly adapted to the exertion which he has to undergo;—the form is essential to be adapted for the purpose for which he is intended, whether for riding or

draught. In the latter case, especially for heavy work, the broad chest is eligible, as acting more effectively on the collar, both from size and weight. If light draught be required, a moderate size, with depth of girth, is preferable, whilst for riding, the chest should be so formed as not to throw the weight too forward, the result of which would be undue and injurious pressure on the legs.

The back is the next point. If the horse be intended for riding, and speed be required, the back may be longer than for other purposes, as the paces of the horse will be easier. If for general purposes, a moderately short carcass is to be preferred; it will be more compact, stronger, and yet sufficiently easy in pace. The back should be straight to the loins, and these should be broad, muscular, and well joined together, no depressions being observed between them, this being a sure indication of weakness. There should, however, be a depression behind the withers, and these should be high; for independent of the additional power gained, the more the fore quarters are raised, the longer will be the stride, and the safer will be the action. The muscles about the withers should also be well developed, as should also those of the chest, which should be well expanded.

The shoulder is another important point; the greater the angle between the shoulder-blade and the lower bone the greater will be the ease in motion and the more extended the stride, an upright shoulder being inimical to both. An oblique shoulder also gives greater safety, from the centre of gravity being kept well behind the points which support the animal. It is not difficult to form a correct judgment of the proper obliquity of the shoulder, for where it is too upright, it has, of necessity, more muscle, which from undue exercise becomes thick and clumsy. These points should be well attended to in a riding-horse, but for the purpose of draught, in which great power is essential, and the pace of less importance, the upright shoulder is not so disadvantageous, as giving the horse additional weight to throw into the collar, as well as enabling him to press steadily on every part of it, his hind quarters giving the requisite impulse.

The arm, or the part extending from the elbow to the knee, must next be regarded; and the muscles proceeding from the shoulder-blade and the lower bone of the shoulder, to the junction of the elbow, should be well considered; for upon these depend the free extension of the arm, and the quickness and length of the stride. Here we have an



illustration of the lever; the elbow-joint is the centre of motion, the shoulder is the weight to be raised, and the leg is the lever, and the muscles form the power by which the limb is raised. Hence, the elbow itself should be deep, as giving increased power of action.

The knee is next to be considered. It should be very broad in comparison with the arm and the shank, for as this is the fulcrum of the whole machine, the muscles and ligaments which envelope it should be of the greatest possible strength, and should be thoroughly developed. The broader the knee is, the greater will be the strength of the part. The leg itself is of great importance: it is formed of three bones, giving great strength, from the whole weight of the horse being thrown upon it. The sinews should be firm, prominent, and clearly defined. The foot is described in another page.

Other points of the horse have been so repeatedly noticed, when speaking of distinct breeds, that it is unnecessary to recapitulate them here.

The horse is naturally an herbivorous animal. His thin and muscular lips, his firm and compressed mouth, and his sharp, incisor teeth, are admirably adapted to seize and to crop the herbage. In his domesticated state, however, he is destined to live partially or chiefly on other aliment, and that of a much harder kind—the various species of corn; therefore, while man and the carnivorous animals can only champ and crush their food, a provision is given to the horse, in the structure of some of the bones of the head, by means of which he can comminute and grind down his food as perfectly as in the best-contrived mill.

The teeth of the horse require some lengthened consideration, not only from their admirable adaptation to this purpose, but as indicating, by the various changes which they undergo, and almost beyond the possibility of error, the age of the animal. He may, when young in years, be reduced nearly to the decrepitude of age by the barbarous usage of those who ought to have been his most zealous protectors; the cavity above the eye may be deepened, the under-lip may fall, the limbs may be bowed, and the feet may be battered and distorted—but it is not easy to alter the character of the teeth.

The colt is generally dropped with the first and second molar and grinding-teeth having forced their way through the gum. When he is about seven or eight days old the two central front or incisor teeth, above and below, appear.

At the expiration of five or six weeks, the two next incisors may be seen. At three months they will have overtaken the central ones, and both pairs will have nearly attained their natural level. A third grinder will then have appeared; and a little before or after the eighth month, the third nipper, above and below and on each side, will have protruded. The colt will now have his full complement of front or cutting teeth.

These teeth are beautifully adapted to their purpose. They have in front an elevated cutting edge of considerable sharpness. It is formed of enamel, a polished substance which covers the tooth, and is almost too hard to be acted on by a file. This elevated edge is bent somewhat inwards, and over the tooth, so that there is a depression behind it which gradually becomes stained by the food, and constitutes what is called "the mark," in the mouth of the colt or horse.

This elevated edge of enamel, hard as it is, is gradually worn down in the act of nipping and cutting the food; and as it wears away, the hollow behind becomes diminished, and is at length totally obliterated. By the degree in which this mark is effaced, the horseman, not only with regard to the first, but the permanent teeth, judges of the age of the animal. This obliteration begins to be manifest at a very early age. At six months it is sufficiently evident in the four central nippers. At a year and a half the mark will be very faint in the central nippers, diminished in the other two, and the surface of all of them will be flattened.

At twelve months a fourth grinder protrudes, and a fifth at the expiration of two years.

These are all temporary teeth. They were only designed to last during an early period of the life of the animal; and when his jaws become considerably expanded, they give way to another set, larger, firmer, and that will probably last during life. The permanent teeth had been long growing in the socket beneath the temporary ones, and had been pressing upon their roots, and that pressure had caused an absorption of these roots, until at length they lost all hold and were displaced.

When the animal is about three years old, the central pair of nippers, above and below, are thus removed, and two fresh teeth, easily distinguishable from the first by their increased size, make their appearance, so that a three-year-old colt is easily recognized by these two new and enlarged central nippers.

A three-year-old colt has his form and energies much more developed than a two-year-old one, and is considerably more valuable; therefore some dishonest breeders endeavor to pass him upon the unwary as being a year older than he really is, and they accomplish this, in an ingenious but cruel manner, by punching or drawing out these teeth. This cannot, however, be effected until a portion of the second year is past, when the permanent teeth below are beginning to press upon the roots of their predecessors, and then the breeder extracts the central milk-teeth. Those below, having no longer anything to resist their progress, grow far more rapidly than they otherwise would do, and the scoundrel gains four or five months in the apparent age of his colt.

Can this trickery be detected? Not always, except by one who is well accustomed to horses. The comparatively slow wasting of the other nippers, the difference of the development of these nippers in the upper and under jaw—for the breeder usually confines his roguery to the lower jaw, the upper one being comparatively seldom examined—these circumstances, together with a deficiency of general development in the colt, will sufficiently enable the purchaser to detect the attempted cheat.

The honest mouth of a three-year-old horse should be thus formed:—the central teeth are palpably larger than the others, and have the mark on their upper surface evident and well defined. They will, however, be lower than the other teeth. The mark in the next pair of nippers will be nearly worn away, and that in the corner nippers will have begun to wear.

At three years and a-half the second nippers will be pushed from their sockets, and their place gradually supplied by a new pair; and at four and a-half the corner nippers will be undergoing the same process. Thus at four years old the central nippers will be fully grown: the next pair will be up, but will not have attained their full height; and the corner nippers will be small, with their mark nearly effaced. At five years old the mark will begin to be effaced from the central teeth; the next pair will be fully grown, and the blackness of the mark a little taken off; and the corner pair will be protruding or partly grown.

At this period, or between the fourth and fifth year, another change will take place in the mouth of the horse; the tushes will have begun to appear. There will be two of them in each jaw, between the nippers and the grinders, considerably nearer to the former than the latter, and particu-

larly so in the lower jaw. The use of these tushes in the domesticated state of the horse is not evident; but they were probably designed as weapons of offence in the wild state of the animals. Attempts are too frequently made to hasten the appearance of the second and the corner teeth, in the same manner as described with regard to the first, and the gum is often deeply lanced in order to hasten the appearance of the tush.

At six years old the mark on the central nippers will be diminished, if not obliterated. A depression and a mark of rather brown hue may remain, but the deep blacked hole in the centre will no longer be found. The other incisors will also be somewhat worn, and the tush fully developed.

At seven the mark on the next pair of incisors will have nearly disappeared, and the tush will be rounder at the point and the edges.

At eight the mark will be gone from all the incisor teeth, and the tush will be evidently rounder and blunter.

At this period another piece of trickery is occasionally practiced. The breeder had, until the animal was five years old, been endeavoring to give him an older appearance than his years entitled him to, because, in proportion as he approached the period when his powers were most perfectly developed, his value increased; but now he endeavors to conceal the ravages of age. The horse is cast, and with a sharp-pointed steel instrument a little hole is dug on the surface of the corner incisor, to which a red-hot iron is afterwards applied. An indelible black mark is thus left on the tooth. Sometimes the roguery is carried further; the next tooth is slightly touched with the engraver and the cautery; but here the dishonest dealer generally overreaches himself, for the form and general appearance of a six-year old horse can rarely be given to one which has passed his eighth year. The eighth year having passed, it is difficult to decide on the exact age of the horse. The incisors of the upper jaw are then the best guides. At nine years the mark will be worn away from the central teeth; at eleven, from the next pair; and at twelve from the corner ones. The tush likewise becomes shorter and blunter.

There are many circumstances which render a decision as to the age of the horse very difficult after the marks are effaced from the lower incisors, and even before that period. Horses always kept in the stable have the mark much sooner worn out than those that are at grass; and it is impossible to form any certain calculation as to crib-biters.

Of the age to which the horse would naturally arrive it is also impossible to say anything satisfactory. Many have exceeded thirty, and some even forty years; but, from ill usage and over-exertion, many come to their end before they have seen nine or ten years.

Another part of the horse must not be passed over without especial notice, namely his foot. This is a truly admirable piece of mechanism, and deserves to be well understood. It simply consists of a horny case or covering for the protection of the sensitive parts within, and extends from the termination of the hair to the ground. It is deepest in front, where it is called *the toe*, lower at the sides, or *quarters*, and of least extent behind at *the heel*. It is placed in a sloping or slanting position, forming an angle, which, in the healthy foot is about 45 degrees. Any deviation from this is considered a defect. If it is more oblique than this, it indicates a flatness of the sole, or even a protrusion of it downwards, constituting a pumiced or convex foot—a very great evil, as it exposes the sole to bruises or undue pressure. If the crust or box is too upright, it indicates a tendency to contraction, thrush, and inflammation, an upright pastern, and jolting unpleasant pace. These are serious deviations from a natural state of the foot, and should be immediately recognized by the observer. The crust is thickest in front, and becomes gradually thinner towards the quarters and heels. This thinness is greatest on the inner quarter, or inner portion of the crust, and more weight is thrown upon it than upon the outer quarter. This may seem at first view to be rather singular, but it is a wise provision of Nature, in order that the elasticity of that part may be brought more into play, and dangerous concussion lessened or avoided. The nails are often driven too close on the inner quarter, the consequence of which are corns, contraction, and sand-crack.

The foot often varies greatly in magnitude in proportion to the general bulk of the horse. This is a considerable evil. A large foot not unfrequently becomes objectionable from its striking the opposite leg; on the other hand, the large foot will not sink so readily into soft ground, and consequently not demand so great an effort of strength to extricate it. In general broad and flat-footed horses possess the greatest strength; small and narrow-footed ones have superior speed. Both, within certain limits, possess their respective advantages and disadvantages. Large bulky hoofs are weaker than others, in consequence of being composed of a thin, soft, porous horn. Small feet generally possess a close-woven

horn, but are deficient in circularity of figure, with great depth of substance, and are of a more durable nature.

On account of the superior weight which it bears, the inner heel wears away more quickly than the outer one. It will often be scarcely necessary to remove any horn from the inner heel, for that is already effected by the wear of the foot. The smith frequently forgets this, and pares away all round with his butteris or his knife, and thus, leaving the inner quarter lower than the outer, throws an uneven bearing upon it, and produces corns, sand-cracks, splints, and various other evils. The depth of the horn in the front of the toe, measuring from the termination of the skin, is on an average about three inches or three inches and a half, and its thickness varies from three-eighths of an inch to half an inch: but near the top, and at the inside, it is found to be scooped or hollowed out, and contains or covers a thickened prolongation, falsely called the coronary ligament, for it has no ligamentous substance belonging to it. It is a collection of blood-vessels bound together by a fibrous texture, and its office is to supply any loss of substance in the hoof that may be occasioned by accident or disease, and also to secrete the substance of the wall or crust of the feet.

The crust or hoof is composed of fibres running perpendicular from the coronet to the ground in front, and at the quarters, taking an oblique direction forwards. This construction enables the heels to expand when they come in contact with the ground, and this expansion permits the gradual descent of the bones of the feet, and obviates much concussion. It is in order that this expansion may readily take place, that the crust, as has been already stated, is thinnest at the quarters and towards the heels.

On the inside of the crust are numerous narrow, thin plates, or processes, called the laminæ, arranged in the nicest order, and with almost mathematical precision. They extend parallel to each other in a perpendicular direction from immediately beneath the coronary ligament to the junction of the wall with the sole, and are so thickly set that every part of the crust is occupied by them. They are likewise continued over the surface of the bars, of which mention will presently be made. They are about 500 in number, broadest at their base, and terminating in the most delicate expansion of horn. They correspond with similar leaves projecting from the coffin-bone, or internal bone of the hoof, and thus present a most extraordinary superficies for the attachment of the coffin-bone. The laminæ from the coffin-bone

and those from the hoof form a complete union, which, for strength and elasticity combined, may vie with any piece of animal mechanism that is known. It has been calculated that the united superficies in a foot of tolerable size will yield a surface of attachment equal to 212 square inches, or nearly one square foot and a half. This is a contrivance to prevent concussion which may well excite our admiration.

The bars or processes of the wall of the foot, inflected obliquely across the bottom of the foot, along and outside of the frog. The slightest consideration will show that their office is both to admit of, and to limit to its proper extent the expansion of the foot. When the weight of the animal is thrown on the laminae, these arches will shorten and widen in order to admit of the expansion of the quarters, and when that expansive power ceases to act, the bar will return to its usual curve, and the foot will regain its usual form. It is strange that, even at the present day, the farriers should maintain their combination to get rid of this beautiful and useful contrivance of nature. Although every foot from which the bars are removed becomes more or less contracted at the quarters, old prejudices prevent them from tracing the connection of cause and effect. The owner of the horse should lay it down as a principle, from which his farrier should never be permitted to deviate, that the bars of the foot should never be cut away.

The sole is the arched plate at the bottom of the hoof, and it is one of the most important parts of the foot. Thousands of horses are ruined by the mass of horn which is suffered to accumulate on it, and, occasionally, the sole is materially injured and wounded by it. The natural thickness of the sole is about one-sixth of an inch, but that which forms a union with the bars is nearly double the thickness of the other parts. In its natural state it is to a certain degree hollow, and thus it has the capacity of descending with the weight of the horse. A flat sole cannot descend lower. This, also, is a circumstance that the smith should be compelled to attend to.

The frog is the prominent triangular body occupying the chasm between the bars. It extends forwards towards the toe, about two-thirds of the distance between the toe and the heel. It is of a cuneiform figure, not a little resembling a ploughshare. It consists of two rounded or projecting surfaces, with a fissure or cleft between them, but uniting about half-way down the foot, and forming a wedge with the sharp

point forwards, in order to give security to the tread of the horse. It assists also in a material degree in the expansion of the foot. Thus the diminution of the substance of the frog, and its elevation above ground, must be injurious. The rough and detached parts may be removed, but the substance of the frog should always be left *just above or within the level of the shoe.*

When well treated the horse lives to a great age, though as treated in general, his best years are from five to fifteen, instances, however, being numerous in which he is serviceable to twenty years of age, and even longer. An instance is on record in which he reached the extraordinary age of seventy.

The senses of the horse are acute and delicate, and his intellectual character is marked by a quick perception, an excellent memory, and benevolence of disposition. As in man, some horses are highly courageous, others timid; some lively, playful, and generous, whilst others are stupid, obstinate, and vicious. He is rarely found to exert his vast strength and activity to his master's prejudice; on the contrary, he will endure fatigue, even to death, for his benefit. One of his most eminent characteristics is that his efforts are not made so much from fear of his master, as from a certain consciousness of the necessity for doing his duty, for the sake of the services which he receives at the hand of man.

The natural affection of the horse is not displayed towards man only, but he extends his attachment to other animals who are associated with him, and not to his own species alone, but to animals of any other species. The fondness of the horse for dogs is well known, and when a cat takes to the stable, she is presently on the best of terms with the inmates. Horses are much attached to a goat, and this animal is hence frequently kept in a stable, the result being much natural regard between the goat and the horse.

The horse, too, has his tastes as well as his rider. The fondness of horses for music has been an observation in all ages, and the bands of a cavalry regiment have no little to do with the proud military bearing of the regimental horses. All soldiers know the delight with which a horse listens to a military band.

It was formerly customary, in order to improve the appearance of the horse, to dock and nick his tail. The custom no doubt originated with the same blockheads who slit the tongue of a magpie to make him talk; a more barbarous or a more unsightly practice was never adopted. The pain



which the animal suffers in having his vertebral column cut through, and with it the medullary substance and the spinal cord, is the most intense which one brute can inflict on another, even though the inflictor of the pain be the brutal owner of a horse. The only defence which was ever put forth in alleviation of so barbarous a cruelty is, that the horse shall carry his tail like an Arabian, as though the sightless and indelicate stump, sticking out of the hindquarters of a docked horse, was anything but a ridiculous caricature of the caudal appendage of the Asiatic horse.

But the cruelty of docking a horse or nicking him does not end with the infliction. The tail is given to the horse by the same Providence which made him, for the twofold purpose of protecting a tender part against cold in winter and to lash off the flies and other insects which torment him in summer. Both these ends, necessary to the comfort and even health of the horse, are frustrated by a half-witted *ignoramus*, who believes that he can mend the works of the horse's Maker. To make the tail of the animal more useful than it was intended by Providence to be, he renders what his barbarity has left of it altogether without motion of any kind.

A very little observation on the habits of the horse would have shown the folly as well as cruelty of such a practice. There are few portions of a horse's body which he cannot reach with his teeth or his tail, the latter being in this respect a hand to him. But if a horse itch in any part which he cannot reach, he will go to another horse, and bite him on the part which he himself wants bitten. His friend will take the hint and perform the kind office for him. This should hence show the necessity of not depriving the animal of those portions of his body by which he can free himself from annoyance.

## CHAPTER V.

## ON BREEDING STOCK.

BREEDERS of all kinds of animals are unanimous in their opinions that it is necessary to have distinct varieties, usually distinguished as thoroughbred, for the propagation of the species, whether it be determined to carry on the unblemished pedigree, or to cross with other breeds.

It is a general observation with those who have devoted attention to the subject, that horses and mares require much time after they have been trained, before they distinguish themselves as the progenitors of first-rate stock. This affords another argument in favor of early training. Both with mares and stallions their best foals have often not come forth till they were advanced in years. According to the presumed age of the Godolphin Arabian, he was thirteen years old when he became the sire of Regulus; Paynator and Whalebone were each of them twenty years old when their sons, Doctor Syntax and Sir Hercules, were foaled. Potooooooooo, Sultan, Langar and Venison, were each of them sixteen years old when they became the sires respectively of Waxy, Bay Middleton, Epirus and Kingston. Melbourne was fifteen when he begat West Australian; Haphazard fourteen when he was the sire of Filho da Puta. Orville was the same age when he was the sire of Ebor, and twenty when he begot the still more celebrated Emilius; and an infinity of similar examples may be added. This property applies more generally to stallions than to mares; for it is sometimes apparent that their first foals are vastly superior to their subsequent produce. This was the case in olden times with the dams of Mark Antony, Conductor, Pyrrhus, and Pantaloon; and more recently with Sultan, Touchstone, Sir Hercules and Filho da Puta. Whether the subsequent change of partners has any prejudicial effect on the future progeny is a subject worthy the most scrupulous attention of breeders.

It is curious to remark, that when a thoroughbred mare has once had foals to common horses, no subsequent foals which she may have had by thoroughbred horses have ever

evinced any pretensions to racing qualities. There may be an exception; but I believe I am correct in stating that there is not.

The science of breeding horses is replete with interest to those who are immediately concerned in that pursuit, or racing in its various phases; and to those who are not, considering its importance in a commercial and national point of view, it cannot fail to excite attention. The unanimity which has presided over the progress made in racing and breeding for that purpose is indubitable; still there are persons disposed to censure the exciting customs of the turf, as conducive to the defeat of that object for which they ought to be framed with the most careful application. In addition to the subjects already noticed, it is frequently argued that the prevailing fashion of handicap races, and light weights in general, are calculated to encourage the breeding of a degenerate class of horses. Here it must be observed, that it is not in the power of human ingenuity to introduce systems which are quite free from objection. In whatever may be advanced in the way of improvement, something occurs to prevent the attainment of perfection. With respect to weights, it cannot be denied that the custom of carrying high weights prevailed with our ancestors very materially over the usages of modern times; but without investigating the fact, many persons entertain an opinion that it was an universal practice; which, however, is a mistake.

It is not because these facts are mentioned, that the prevailing custom of running at very light weights can be defended, for the racing community has fallen into a very great extreme, more prejudicial on other accounts, than with reference to its influence on any presumed degeneration of the race-horse.

That higher scales of weights than those which are generally adopted would be conducive to the interest of all parties there cannot exist a doubt, and many of the best and most enlightened patrons of the turf concur with the opinion; but it is a subject over which it is difficult to exercise any control.

For all purposes, except that of draught, fifteen hands two inches is the most desirable, an inch over or under included. There is a standard of excellence which regulates the stature of all animals; that exceeded or not attained, the acme of perfection is wanting. It is unnecessary to remind those who are intimately acquainted with racing that no undersized horse, that is, one not exceeding fourteen hands,

however well bred he may be, has the slightest chance in a race with a horse of fair pretensions, a hand and a half higher, with proportionate power and muscular symmetry. The average race-horses of the present day are far superior, in consequence of the improvements made in their size and power. This has been accomplished by selecting those to breed from which have established a fame on the turf, or near relatives to them; and those which, being well bred, from their power and symmetry present reasonable expectations of producing foals of value. To this may be added good and suitable nourishment, and a climate highly congenial to the constitution of the equine tribe. The partisans of the ancient worthies contend, that although low in stature, they were superior in those proportions which gave them power—an inference which cannot be established. Length is an essential auxiliary to racing properties, and an animal only fourteen hands high, with the length and substance of one fifteen hands two inches, would be out of all proportion.

The most talented and successful breeders of horses during the present century, thoroughly convinced of the impropriety of breeding from families nearly related, have scrupulously avoided it.

To determine by the external appearance of a horse on the qualifications he may possess, or what he may be able to perform, is an exercise of judgment with which the most experienced are not endowed. Appearances are so fallacious, that the most skillful will find themselves mistaken; this applies both to racing and breeding, therefore, much must be left to future development. If breeding horses could be reduced to a system like a sum in arithmetic, or an operation in chemistry, there would be an end to speculation, and the exciting interest with which it is accompanied would be wanting. It is not to be inferred from this that chance presides unreservedly over its destinies, far from it; there may be and are some extraordinary incidents which occasionally embellish it with something akin to that character, but they are the exceptions, and not the rule. Those who take the most pains to investigate causes and effects will be most successful in the enterprise of breeding horses. Temper is a qualification of great importance, and this expression must be accepted with a comprehensive meaning; not simply to convey the idea of docility, but the combined attributes of courage, or good-will to exert the physical powers to the utmost extent; and in proportion as a horse is gifted with physical capabilities and the will to exert them, so will he maintain a position

among his class. There are instances of horses being endowed with perfect symmetry, great power, and the most exquisite action, all of which is of no avail, because they do not also possess the energy to give effect to those good qualities.

This subject affords a very expansive field for observation, although it is one which breeders seldom take into consideration. It is the presence of an equivalent portion of nervous excitability of the brain and nervous system, influencing the muscles of locomotion with physical power, which combine to establish the perfection of endurance. If the nervous excitability be in excess, and the animal is gifted with good action, speed will be his *forte*. This is manifest, because the exciting energies of the nervous system exhaust the muscular powers too quickly to enable the animal to continue beyond a short distance. If again those proportions of nervous excitability be slightly wanting, and the horse has a powerful muscular conformation, his energies may be aroused to a certain extent by artificial means. Here much discrimination in the rider is necessary, otherwise the object is defeated. But if with great muscular power the nervous energies are extremely deficient, the animal will be of little value. This may to some extent afford a reason why very large horses are seldom very good ones. The two essentials, the will and the power, must exist in all horses which perform extraordinary feats. The most competent judges are not able to decide upon the merits of a horse until those merits are tried. A moderately experienced person can determine if the essential points, such as the shoulders, back, loins, and quarters are in conformity with the generally acknowledged opinions of symmetry; he can tell also the animal being in working condition, if he shows a fine development of muscle and sinew; and the action will afford a fair criterion whereby to judge if the muscles, sinews, and levers be proportioned to each other; but no one can tell whether the horse possesses the energetic will to put all his powers into effect until he is tried, for whatever purpose he may be adapted. To convey evidence upon this point the head is the most important organ. In favorable cases the contours are agreeably traced, the lines are most beautifully developed, with a fine expressive eye, full of vigor and energy. But these signs may be fallacious; they may indicate a choleric, fiery temper, impatient of reasonable control, which will occasion the speedy prostration of the muscular system. At the same time that a neat, light, well-formed head, may generally be considered as indicating supe-

rior corporeal powers: a dull, heavy, sullen aspect is a pretty sure index of the reverse. The spinal marrow which passes through the whole length of the vertabæ is the vital cause of muscular motion, and from it the nerves issue. This spinal marrow is a continuation of the posterior portion of the brain, and as all this wonderful and beautiful machinery is entirely hidden from inspection, the fallacy of judging from external appearances is readily explained. Racing is the medium through which these characteristics are discovered; and breeders will find it to their advantage to investigate minutely on which side the balance preponderates, whether it be in favor of the will or the power. By this some of the uncertainty connected with the speculation of breeding horses will be overcome. If the sire be of very energetic temper, he is a good cross for a mare possessing power, with a dull, phlegmatic disposition. Those who have devoted their attention to the many interesting subjects connected with the racing career and lineage of the equine race, are aware that the most valuable qualities that the horse can display will sometimes lie dormant through a generation or more, and then burst forth with renewed distinction. There can be no doubt that this is occasioned by a deficiency of the exciting force or energy of the brain and nervous system which influences the muscles of locomotion—for that is the power which moves the machinery. This inestimable faculty may be affected and sadly deranged by accidental causes or injudicious treatment. If an animal be frequently and seriously alarmed or punished, it will have a marked and visible effect upon the nervous system. This will influence the muscular powers, and render them incapable of merely slight exertion. This is exemplified by the animal breaking out into profuse perspiration. Rational modes of treating young horses are by far more generally known and practiced than they were only twenty years ago. The ordeal which many of them had to undergo in bygone days in the hands of inconsiderate persons, for the purpose of preparing them to run for early engagements, was well calculated to raise an outcry against the practice of training them at two years old. Even the probationary exercise of lunging was carried often to an excess prejudicial and dangerous to the nervous system, the muscular powers, and the delicate texture of joints and tendons. A moment's reflection will determine, that if a young animal, or indeed one of mature age, be wantonly excited to perform so much labor as to occasion exhaustion of the muscular powers, the sympathy existing between the

muscular and nervous system will interfere to restrain such aggressions in future. The more we scrutinize the elaborate and beautiful works of nature, the more we must admire the wonderful order by which they are regulated. If one portion of the animal frame in its influence over another subdues, distresses, or injures it, some superior faculty interposes to keep the machinery in order. Thus, in the event of extreme exhaustion, the muscular powers of the animal having been set in motion by the brain and nervous system, man in his ignorance, by over-exciting the nervous system, causes the muscles to be excited beyond the limits of convenience and reason. The brain and nervous system participate in this, being the primary agent acted upon, and in its turn acting upon the body, of which it forms a part, on a future occasion declines to exert itself; in a word, the generous temper and high courage which previously adorned the victim is dispirited and broken. If, however, the nervous system be more highly gifted, so that it overcomes the muscular powers, the poor creature becomes emaciated and weak, losing its condition sometimes without an apparent cause.

The great difference which is on most occasions apparent in the condition of the stud-horse, and the brood mares, requires a passing comment. The former is generally in the highest state of excitement, his spirits bounding with gay delight, so that he can hardly be restrained within moderate subjection to the control of his attendant. This is the result of high keep and the natural temperament of the animal. But how different the appearance of the poor mare—she is comparatively in woeful plight—she is seldom seen bounding in playful or joyous mood, but is seemingly contemplating, with careworn anxiety, the troubles of a matron. To some extent this is a state natural to the pregnant female, but in many instances it is increased by the quality of the food, which principally consists of grass. The keep of horses and mares requires to be more nearly assimilated in order to render more certain the state of pregnancy, and more perfect the condition of the foetus. Part of the food which the mare consumes is destined to afford nourishment to her embryo offspring, and like herself, it will have imparted to it some of the properties of that food; it is therefore most important that the nutriment which she receives should be of that kind which is calculated to establish a vigorous constitution.

The judicious selection of proper crosses is one of the most momentous considerations connected with the management of a breeding stud. An intimate acquaintance with the proper-

ties and propensities of the different families of the thoroughbred horse can only be attained by constant attention and careful comparisons of results, and whoever enters on the costly speculation without having minutely investigated these matters, does so with very little more than chance to befriend him. In making purchases of untried racing stock it is equally essential. To those who speculate upon racing ventures it is a subject of no mean importance, for it will enable them to draw valuable inferences with reference to dark horses. The crosses which have from time to time been most eminently successful speak for themselves in the respective pedigrees of horses of celebrity; to attempt to enumerate them would be an irksome and unprofitable task. When a mare has terminated her career on the turf she is very commonly consigned to the stud; in many instances without considering her worth in that department. Thus a vast number of foals are produced, many of which occasion disappointment. This is a difficulty which cannot readily be overcome; for the question arises, "What defects ought to exclude a mare from the stud?" Constitutional unsoundness and hereditary infirmities, no doubt; but beyond these, where is the line to be drawn? Unwilling to sell a mare for a trifling sum, the owner very often reconciles himself with the flattering excuse that she possesses or inherits some sterling qualities which may descend to her progeny.

It must be confessed that there are too many mares used for breeding which are unworthy of the honor; but, again, it must be remembered that the produce, in due time, has to undergo the refining process through the medium of that inquisitive crucible, the race-course, which assists in some measure in the extirpation of weeds. Worthless fillies, the produce of worthless parents, may, in the possession of some persons, go on for a time; but there are few who do not soon become weary of breeding such rubbish. Thus there is an antidote to the evil. If the facilities for breeding inferior stock were confined to the females, the consequences would be unimportant; but unfortunately it extends to the males. It appears to be an irreconcilable contradiction that the public, who have to pay for the services of a horse, would ever patronize one unless he was eminent for his good qualities; neither will judicious and experienced breeders ever fall into that error; but there are young beginners who do, and thus it is that animals which never ought to be permitted to perpetuate their species keep up a race distinguished for bad properties. These errors are committed only by a small pro-



portion of those who embark in the speculation, and, therefore, the injury sustained is more the loss of money to the individuals than any deterioration in the national character of the horse.

There is a mistake into which some of the most extensive, and it may be added, highly experienced breeders have fallen, that of not selecting a suitable partner for each mare. A stud of mares is got together, and they may be unexceptionable; a stallion is purchased, and he may be of the very best blood, altogether the most perfect animal of his day, and yet there may be some mares, indeed several out of a number, from which it cannot reasonably be expected that the produce will be highly valuable. Setting aside the contingency of consanguinity presenting a rational impediment, there are many circumstances which ought to be considered as a bar to the union. Great disproportion of size may be one. Although it is held as a principle, and no doubt is a good one, to correct any imperfections which are possessed by one parent by the superiority of those particular points in the other, attempts to rectify diminutive stature by the other extreme are generally productive of disappointment. The increased size to which the English thoroughbred-horse has been brought has been accomplished by degrees, and Nature is jealous of having her handiwork outraged by excess. Disproportion in some of the limbs is commonly the result when great disparity of size characterizes the parents. If either the horse or the mare be defective in the shoulders, it should be determined that the other must be unexceptionable in that respect; the same distinction applies to the back, loins, quarters, thighs, hocks, and legs. There are some breeders who regard with insignificance the perfections of their mares, relying upon the merits of the horse for the perfection of the produce; but, to say the least of it, it is a most hazardous conception. It has been already remarked, that mares which have distinguished themselves most successfully on the turf, have, in many instances, failed to produce foals of any value; and it has very frequently occurred that mares which have only run a few races have been most successful in the stud. Very high prices have occasionally been given for mares to breed from, in consequence of the celebrity they have attained on the turf; but there are scarcely any examples of their having compensated the purchasers. The most valuable mares for the purpose are, undoubtedly, those which have bred runners; and, if their cost price is high, they generally remunerate the enterprising

speculators by the superiority of their offspring. There is a great advantage attendant upon breeding from a mare whose produce has been tried in public, as by that means some of the characteristic faculties of her produce may be known, and which will afford a valuable criterion in the selection of the horse which is to become the sire of a succeeding foal. It appears to be a property inherent in some mares to breed all, or nearly all, their foals endowed with the same propensities, although the propensities of these foals differ from her own. Thus, a mare may be gifted with great stoutness, and her foals more celebrated for speed; and there are also examples of speedy mares having bred foals which have proved particularly stout.

The success of a breeding stud will be regulated to a very considerable extent by the judgment which is exercised in the selection of mares. There are many which are considered very well bred, which are by no means desirable animals to breed from. It may be urged that a thorough-bred mare cannot be otherwise than well bred; but her lineage may go back to ancestors of unworthy pretensions, and on that account she may not be suitable for the purpose. She may also possess hereditary blemishes, either in person or in pedigree, which, unfortunately, more frequently develop themselves than the highest classes of perfections. Action is an accomplishment which in general does not command the attention it deserves. In racing, providing a horse gets his head first past the winning-post, no one would care whether it were accomplished by the most uniform and exquisite motion of the limbs, or whether it could be performed by an entertaining succession of somersaults. The qualities which win fame on a race-course are speed and endurance, no thought is bestowed in what manner the propelling power is effected; and these propelling powers are sometimes combined with very indifferent action. This in a race-horse, so long as his services are confined to the turf, is a consideration of no importance; he may be valuable for that purpose, be his action ever so faulty; but in the stud it becomes a very different affair. Action is very commonly entailed upon the offspring, more frequently than speed and stoutness, to which good action is generally an important improvement. It can scarcely admit of a doubt, that the failure which has attended many horses and mares which have been good runners themselves, but which have produced very inferior stock, may be in many instances traced to defective action. The conformation which conduces principally to this perfec-

tion for racing depends greatly on the hind legs, the thighs, the back, and the loins; from the shoulders the motive power of the fore legs proceeds. For racing purposes, the quality of the fore legs is not of equal importance as in those animals which are destined for hunters, or riding horses. This opinion is evidently maintained by many of the most experienced breeders for the turf; because they continue to breed from horses in whom this failing is hereditary. So long as the shoulders are gifted with the power of free action, and the fore legs are sufficient to act as props to the machinery, by the aid of boots, bandages, and such like appendages, the legs may be kept in tolerable order for a time, and enable a horse to run for his early engagements. But yet to how much anxiety, and often loss, does this imperfection subject the owner. There is a constant apprehension that the legs will fail. Every sweat, every gallop which a horse with infirm legs takes, in his preparation, excites his owner to nervous trepidation, fearing that a break-down may be the consequence. In racing the anxiety is still greater. No prudent man likes to encounter the additional risk of backing his horse for a race when the legs are of defective quality. The effect is often extensive, and is not restricted to actual lameness, or breaking down. Horses which have weak fore legs will tire in those limbs before they experience distress in other parts of their frames; this, of course, affects their running and occasions their defeat.

There is a certain refinement of form, a gracefulness of outline, an elegance of motion and aristocratic bearing, characteristic of a high-bred mare, which merits distinction. Breeders often show a great predilection for what they term fine, large, roomy mares; they are often pertinaciously uncertain in their produce; one year their foal is undersized, and the succeeding one it is overgrown. The Arabs are said to attach more importance to the perfections of their mares than to those of their horses. English breeders might take a profitable example in this respect from them. They frequently breed from inferior mares, at all events, some whose merits have not been tried; but very rarely, indeed, from horses which have not gained some reputation on the course, let their pedigrees be ever so pure and unexceptionable. In the early days of breeding it was by no means an uncommon practice. The only modern instance of an untried race-horse gaining repute in the stud was that of Defence. The high premiums paid for the services of stallions of fame, and which breeders are willing to pay, affords convincing proof

of the importance which is attached to the sire. In England horses of very great pretensions are patronized at £50 each mare, descending to £10 as the minimum for sires of respectable eminence. At the present day the number of stallions is considerably above the average of former years, which tends to a diminution of charges even of first-rate horses; and as they descend in the scale of estimation the reduction is more conspicuous. This is a fact which cannot be regarded in any but a fortuitous aspect; being a greater number, there is a greater variety, and a more copious field for choice. When we examine the question as to the influence of the sires, compared with the dams, on the breed of horses, the increase in the number of the former must be accepted in a most favorable position.

That the object of promoting a breed of sound, useful, powerful horses was not accomplished by deviations from the customs of legitimate racing, is well known to all who have devoted their attention to the passing events on the turf during the last twenty years. In every instance they have had an adverse tendency. There is not an example in the annals of racing of a *bona fide* half-bred horse, that could defeat a good thorough-bred one of the same age, at high weights, over any distance of ground from two to four miles; and the greater the distance, and the higher the weights, more conclusive have been the results in favor of blood.

There is a circumstance which must not be omitted in connection with breeding half-bred horses, as it may serve as a beacon for other purposes. The most superior produce always resulted from the mare which was not thorough-bred, and the highest-bred horse. This principle is likewise acknowledged by the breeders of all other kinds of stock, whether cattle or sheep; and it is a subject of great importance to those who breed hunters and first-class riding horses. It leads to the conviction that the thorough-bred horse, from the great care that has been, from time to time, bestowed in the selection of the choicest subjects, has now become a more highly-bred animal than the Arab, from which he was originally descended. This may afford another explanation to causes already named why the produce from Arabian horses and English thorough-bred mares are so utterly worthless. The results might be more favorable through the agency of Arabian mares with English horses. It was the opinion of the late Earl Spencer, who, all the world is aware, devoted great attention to the breeding of domestic animals, that the influence which each parent exercises over its progeny is in

proportion to the antiquity and purity of the race to which it belongs. This theory may now be said to have received practical proof, and to be generally acknowledged.

From the numerous facts which have been advanced, each bearing upon the most important points, we must come to the conclusion that the progressive increase of racing and breeding horses for that purpose has led to unequivocal improvement; and it is clearly manifest that the horses of the present day are superior to their predecessors in size, power, speed, and endurance. The augmentation of their numbers is unmistakeable evidence of the interest attached to the two-fold enterprise. We may now take up another engagement, equally, perchance more inviting, interesting, and familiar to the public, that of breeding horses for hunting, riding, driving, and other useful purposes. The assertion has been made, and it cannot be rebutted, that the supply is unequal to the demand. However, we have the pure source from which they may be produced in great numbers, inadequate though they may be to the requirements of the nation, but having the material, it is only incumbent upon us to bring it into effect upon the most advantageous terms.

The eye delights to feast upon that which is symmetrical and beautiful. There is no creature in the universe, the fair portion of the human race excepted, in which the lines of beauty are so exquisitely defined as they are in a well-shaped horse. Whether we behold him in an easy graceful action, bounding over the elastic turf; boldly facing the opposing barrier which disputes his progress in the chase; proudly stepping (perchance with a fair burden upon his back) in the park: or gayly and gorgeously caparisoned with the paraphernalia of the battle-field; in either instance we admire him for his swiftness, his activity, his docility, and his unflinching courage. Whether the amount of discrimination be great or little with which any individual, gentle or simple, may be gifted, nothing occasions a friend or acquaintance greater offence than an insinuation that his judgment in horseflesh is deficient. This for general purposes is a little species of self-vanity, which may be unimportant, at least so long as it is confined to purchasing; but when deficiency of judgment is exercised in breeding, it becomes a different affair. A worthless producé is not only an individual loss but a public misfortune. There are many who are very fair judges of horses when they are in fit condition to be put to work who are totally at a loss when they attempt to form opinions on breeding, or concerning young horses which are promising

to become valuable animals. Almost every individual who has made the horse his thesis for writing, has given a description of the essential points which every animal must be gifted with that lays claim to excellence. It is a worn-out and unprofitable subject to dilate upon. Practice alone will make an adept in this art. To be a thoroughly good judge of horses is an invaluable acquirement to the breeder, and it is indispensable to him if he is ambitious of eminence and profit. The first considerations in making selections of horses and mares for the purpose of breeding riding-horses, will be to determine whether they are likely to produce foals which will be powerful, active, hardy, and sound. If bulk were most conducive to perfection, the most valuable animal would be the gigantic cart-horse, but his great size and weight is accompanied with slowness of motion, and a dull, phlegmatic temperament. The nature of the substances of which he is composed is conducive to these characteristics. The bone is far more porous than that of a well-bred horse, and the muscles are of a more flaccid texture. There is a greater constitutional disposition to deposit fat in the cart-horse, and his want of activity renders him incapable of accelerated motion. These defects generally diminish in degree as the animal approaches to a more aristocratic lineage; and the most valuable kinds to choose for breeding are those which evince the greatest amount of muscular power, with symmetrical proportion, short legs, and a good pedigree.

Every person who enters into the speculation of breeding horses undoubtedly does so with a view to profit; next to breeding for the turf, his object will be to produce saleable horses gifted with the most valuable properties. No man, however good his judgment may be, can at all times feel certain that his mare will favor him with the object of his wishes. With the first object in view, it is necessary that the mares be adapted to the desired intention, and some difficulty exists in procuring them. There is a greater difficulty at the present period in procuring desirable mares to breed from than there was in by-gone days, when fashion was opposed to riding mares; that prejudice has been overcome, because it has been determined that mares are generally superior to geldings in constitution and endurance. It is a common opinion, but a great error, that very large mares are the most eligible to breed from, they are of all animals the most uncertain in their produce; one year they will present their owner with gigantic foals, and perchance the following year with others as much undersized; they seldom observe the happy medium;

and it is from selecting great, loose-made, leggy mares for this purpose, that we have too many horses of that description in the fairs.

Those conformations, or more emphatically speaking, anatomical proportions, which are conducive to the utmost degree of speed in the race-horse, are not in general the most eligible for other purposes, such as riding, or harness-work. From this cause it frequently happens that stallions, which have been most successful as the progenitors of racing stock, have not gained equal renown as sires of horses of inferior classes; and, *vice versa*, many horses which have been the sires of celebrated hacks have been nearly worthless in the racing harem. This is a fortunate circumstance for the generality of breeders, as it enables them to procure the services of really useful sires at a more reasonable rate.

The custom occasionally adopted by agriculturists of breeding foals from three-year-old fillies before they are broken, is, upon general principles, a questionable policy, but under certain circumstances it may be rendered justifiable.

Comparing the thorough-bred horse with the cart-horse, we are scarcely able to reconcile our ideas with the fact, that they are varieties of the same species of animal, so great is the distinction between them in their movements, appearance, temper, capabilities, and habits. They stand at the two extremes of the equine tribe. The cart-horse is useful for only one purpose, that of draught. The thorough-bred horse is useful for many purposes. If taken from the race-course, he makes the most superlative of hunters; he is undeniable as a charger, and equally good in harness; and, with some exceptions, he makes the best of hacks; and when, poor fellow, he is worn out in those services, he will go to the plow with the most amiable docility. The more persons are acquainted with him, the more highly will they value his numerous properties.

A breeder of through-bred horses has a manifest advantage over him who breeds half-bred ones, on two very essential points. The former knows to a certainty how his mare is descended, and can obtain similar information concerning the horse which he may select; he is thus able to avoid consanguinity. There are few half-bred mares whose lineage can be traced beyond a generation or two, and there are many very promising ones in appearance whose ancestry is not known. The propensity which stock has to the resemblance of a distant relative in character, imperfections, and

constitution, renders the breeder of half-bred horses liable to much uncertainty in that respect. More perfections are combined in and transmitted by the thorough-bred than the mongrel-bred horse.

It is a very frequent exclamation, that breeding horses is attended with so much uncertainty that many persons have been deterred from the speculation, or have relinquished it from disappointment. True, Nature sometimes perplexes us with casualties which we did not contemplate, yet a little investigation will elucidate and explain causes; and again, they will serve as monitors for the future. A chestnut horse and a bay mare may produce a gray, a brown, or black foal; but in all probability it will be discovered on inquiry that some ancestor was of a similar color. When breeding for the chase or the road is the object, color is a consideration of some importance, and that will be most successfully regulated by selecting parents whose ancestors were generally of the most fashionable colors. It frequently happens, both with mares and stallions, that most of their progeny are of different colors from themselves, from the cause already mentioned.

Hereditary defects, among which may be enumerated spavins, curbs, roaring, and constitutional blindness, may lie dormant in the immediate progenitors, and make their appearance in the offspring; but it will nine times out of ten be ascertained that the imperfection is a family inheritance. No surprise ought to be aroused by such events, and when they transpire they should be attributed to want of caution. It is to guard against such casualties that circumspection, study, and experience are valuable; and the more judgment there is exercised the more satisfactory will be the results of the undertaking. Beauty, symmetry, and action are essential qualifications; for the price which may be obtained for a handsome young horse with showy action, far exceeds that which can be procured for one whose only merit consists in his goodness, without style and appearance to recommend him to notice. The value of the latter is not estimated until his good deeds have established his fame, and it may not be in the power of the breeder to put them to the test, or, having done so, to give them publicity.



## CHAPTER VI

## TREATMENT AND MANAGEMENT OF THE HORSE

## THE STABLE.

THE first thing of importance in the treatment of a horse is the building which is provided for him, or his stable. Perhaps the best way of treating the subject is to show what his stable ought not to be, and that, unfortunately, both for the animal and his owner, will be to show what it too generally is.

In the first place, it ought not to be dark; and in this respect there are but too many proprietors of horses who will, in their practice at any rate, be at issue with us, though the total or partial blindness of their horses should have taught them better; for from this cause in general springs the blindness of the animal, which, by nature, is by no means more predisposed to blindness than is his owner. And not only does a dark stable affect the sight of a horse, but his general health also, especially, as is often the case, if he be immured in his stable for days together. Light is just as essential to a healthy condition as food itself, and an animal can no more thrive without the one than the other.

The window should, if possible, be at the south end of the building, so that the animal, if not at work, should, as much as possible, get the benefit of the sun's rays, which, whatever some persons may think to the contrary, were really made as much for the benefit of horses as men. The door should be towards the same aspect. The window should go close up to the ceiling, and may come within four or five feet of the ground. When the window is constructed so as to admit a sufficiency of light, the internal walls should not be whitewashed, as the light reflected from a white surface is highly injurious to the eyes; they should be of a dark gray color, and this is easily effected by mixing a little lamp-black with the lime-wash.

The next thing to be considered is ventilation; and this—as stables are commonly ventilated, or rather not ventilated—is believed to be of no moment whatever. In many old

country stables we find the door made of two portions; the upper one opening while the lower one is made fast. This is very well for farm stables, but this construction is not adapted for those where horses of the higher class are kept. With a door of this description, open at the top, and a lofty window at the other end, open at the top, also a draught takes place which is above the horse's back, and will ventilate the stable thoroughly, especially if the stable be lofty, as it always should be, though it is in general constructed so as to have a hay-loft over it—a great convenience, no doubt—but one which should not be permitted to reduce the height of the stable itself to some seven or eight feet: in which circumscribed space a team of horses is often confined for the night, under the necessity of breathing the same air as they have expired. To expect horses to be healthy or sound under such a condition is to expect an impossibility.

A little consideration will show the importance of perfect ventilation. The air which the horse expires is as totally different a substance to that which he inhales as wood is from iron. He inhales atmospheric air, and the constituents of this pass through his lungs and into his blood; he expires carbonic acid gas, one of the gases most inimical to animal life, as any man may convince himself who will go down into an old unused well. If this deadly gas be not carried off by proper ventilation, it becomes mixed with the atmospheric air of the stable, and is again inhaled, to the great injury of the animal's health. The greatest care is also requisite that it should be thoroughly carried off, and this can only be done as it comes out from the animal's body; when cold, it is heavier than atmospheric air, and sinks to the floor of the stable, in which case it is not so easily got rid of, but may lay the foundation of diseases innumerable, and will certainly shorten the usefulness, if not the life, of the animal. From this, as much as from any other cause, horses may truly be said not to live out half their days.

A thorough ventilation is as necessary in the winter as the summer, and there is infinitely less risk of injuring the horse by cold, than by allowing him to breathe expired air over again. If accustomed to proper ventilation he will never take cold from any judicious means adapted to promote his health and comfort. Pure air in winter is as necessary as in summer, whilst in the summer the more that can be admitted to cool the stable the better. The building should, then, be so constructed as in summer to admit the greatest possible

quantity of pure air, and in winter to admit sufficient for the preservation of the purity of the atmosphere without running any risk from cold draughts. Care must also be taken not to admit draughts of air near the horse's heels, or diseased legs will be the result. Draught cannot be too carefully guarded against, nor is it requisite that such should occur, if a little forethought only be exercised. Some writers on the subject advocate a chimney-shaft to be erected in the stable, by which the foul air can best escape, and also the admission of fresh air over the animal's head by means of perforated zinc.

The next consideration—and it is not less important than either of the preceding—is that of cleanliness. Too many persons believe, or they act as so believing, that the more a horse stands and sleeps amongst the filth of his own litter the more he thrives. This is an error of ignorance, or of idleness—perhaps both combined. The effect of it, at any rate, is to make the animal, in addition to breathing his own breath again, inhale the foetid ammoniacal steams which arise from his own odure and urine. We have even heard farmers defend this mode on the ground that the manure is better, as though the manure were worth anything in comparison with the horse.

Men who reason thus are of the same class as those who strew their manure over the yard in order that the rain may wash from it all the ammoniacal salts, so that it may be rendered the worst adapted possible for the use intended. Yet were their wisdom questioned, they would sneer at any one who might give himself the trouble to instruct them, as they no doubt will at us, when we tell them that cleanliness is as requisite for a horse as for a family.

A brick or stone stable floor is the best; if the latter, the stone should be roughened with small furrows; and in either case a deep drain sunk outside of the stable is necessary, for keeping it perfectly dry, without which either brick or stone floors will be prejudicial from damp. This is of the utmost importance. Neither should such drains be used to carry off the urine. The floor should slope an inch to a yard; but only to the gutter which carries off the urine. Indeed, if this is carried off by an iron pipe with suitable openings so much the better. A tub sunk outside the stable as a receptacle for the urine will soon amply repay the farmer for his trouble; it is too valuable to be permitted to diffuse itself over the dung-heap in the yard, to be washed away with the first shower of rain.

Litter should always be allowed for a horse to stale upon, as it is easily removed; and a little water thrown down occasionally will keep the stable free from smells. Nothing can be more offensive either to horse or man than the smell of putrid urine; whilst, if this be permitted to run into a proper receptacle, and a little sulphuric acid added occasionally, nothing can exceed its value as a manure, which the farmer should be as careful to preserve as he is the corn which it fertilizes.

Within reason, the more room a horse has in his stall the less liable will he be to swollen legs. In no instance ought he to have less room than six feet, and if ten can be afforded him so much the more will he thrive, the comfort being especially felt after a hard day's work. Loose boxes are indispensable to horses of value.

A perfect stable should never have a hay-loft over it. This, of course, will give a little more trouble to the stableman; but where the comfort of a horse is concerned that is of no consequence whatever. A deep manger, with two or three iron bars across, is far preferable to a rack or well for the reception of hay, and will more effectually prevent waste. An arrangement for water should also be provided. The front must, of course, be boarded up, with the exception of the part from which the horse eats. The advantage of this arrangement would be, that all the hay would be eaten, and not pulled down, as is generally the case, and trodden under foot amongst the litter. Much hay will be saved by the use of a deep manger as a substitute for a rack; and an equal saving would take place in corn if the manger were made to slope slightly inwards, instead of outwards, as is usually the case. It would exceedingly puzzle a wasteful or mischievous horse to throw his corn out of such a manger, if it is deep enough; but for this, the manger as usually constructed affords him every facility.

Dung never ought to be allowed to be swept up in a corner, as is frequently the case, and all wet litter should be removed. In short, the more pains that are taken relative to a horse's comfort in a stable the more will he repay those pains; and the farmer, especially, can have no better assurance that the more the horses thrive the more will he himself thrive. The very fact of his attention to his horses, independently of the more effective work arising therefrom, will beget a similar habit of attention to everything else.

## THE HORSE'S FOOD.

This should be of oats and hay of the best quality; beans for hard-working horses, occasionally varied with carrots or Swedes; bran mash; and, under some circumstances, linseed gruel. Many persons are not aware that the price of musty corn and bad hay is vastly dearer than that of the same commodities of good quality—and that the worse the quality the higher the cost. It is so, nevertheless—for whether the purchaser of inferior articles bargain for it or not, he always purchases with them indigestion, foulness of blood, looseness of the bowels, general debility, and glanders; all of these being too costly to be purchased in any stable. We once knew a farmer whose practice it was to sell all his best articles, and keep the refuse of his farm for his own horses; the consequence was, that he never was without glanders or some other disease in his stable; and there was not a carter in the parish who did not give his team a wide berth wherever he met it with his own horses. It was the man's system, nevertheless; he either could not see its banefulness, or he would not alter it; so he died at last from it, having caught a glanderous infection from his own stable. Mr. Spooner, in speaking of this subject, thus testifies his own experience:—"I have known a serious loss sustained by a proprietor of post and coach horses, from keeping a considerable stock of oats, and neglecting to turn them; many horses became glandered and farcied, apparently in consequence of this circumstance."

Much has been said of late respecting the advantage of bruising oats, and various machines are much in vogue for the purpose. Mr. Spooner says of them, "they are apt to produce diarrhoea, especially if the animal is worked hard." It is further alleged that many horses will not eat them with an appetite: and the opponents to the system go further, urging that unbruised oats excite a flow of saliva, necessary to perfect digestion, which is not the case with those which are bruised. The explanation to the first of these questions supplies a very strong recommendation. The stomach, having derived a sufficient quantity of nourishment from a moderate portion, does not require more. With reference to the flow of the saliva, without entering upon the question how far it is necessary to assist digestion, no animal can swallow its food without a sufficiency of saliva to assist the act of deglutition; and it is not recommended to reduce the oats to flour,

but merely to bruise them. Many persons fancy that by giving oats in small quantities, and spreading them thinly over the manger, the horses will be induced to masticate them. Those who have watched their operations will find that a greedy-feeding horse will drive his corn up into a heap, and collect with his lips as much as he thinks proper for a mouthful.

Little, if any, advantage arises from cutting hay into chaff, especially for the most valuable kind of horses. It is done in cart stables to prevent waste, which is often enormous in those departments where horses are permitted to pull the hay out of their racks, and tread it under foot.

The state of perfection to which the higher classes of the horse have been brought, is attributable to the great attention devoted during a long period of time to the selection of the best descriptions for the purpose of perpetuating the species; the treatment they have received, under the influence of a propitious climate; and the nature of the food with which they have been supplied: greater improvements are capable of being realized by judicious management.

With reference to treatment, and climate, practical experience assures us that the atmosphere is suitable to the constitution of the equine tribe; but the vicissitudes of the elements are so great, that protection is necessary to guard against their effects. This is found to apply, not only to the horse, but to all others of our domesticated animals. Warmth, in connection with a pure and uncontaminated air, is of the utmost importance; but it is not necessary to enter into the details by which that desideratum is to be accomplished. The subject of food requires more minute observations, especially as it is too frequently disregarded, except by breeders of race-horses.

The great perfection of the physical powers of the horse is obtained by the due proportion and constituent elements of muscular fibre, bone, and sinew; and the more these substances are respectively condensed, so to speak, the greater the amount of power will there exist in a given bulk. Every description of food which is said to contain nutritive properties, abounds more or less, and in various proportions, with elements calculated for the construction of the different substances of which the animal frame is composed. It is therefore important to select those kinds of food which contain the most of these particles convertible into substances which render the animal of the highest value. The growth of animals, the development of their muscles, the texture of their

bones and sinews, depend greatly upon the quality of the food with which they are supplied. That which is conducive to the production of fat must be rejected; for, although there is not any kind of food which is convertible into muscle which will not at the same time produce fat, there are many circumstances which render different kinds more abundant with the elements of either substance. This is a wise ordination of nature, for to a certain extent, fat is essential to the health and the motive powers of the animal, but in excess it is detrimental. On this point circumspection and experience are valuable acquirements to regulate the condition. When a horse is in a manifest state of plethora, it is a certain indication that the food which he receives abounds too copiously with elements conducive to the production of the adipose substance. It will sometimes happen that a horse does not generate a sufficiency of fat; this may arise from indisposition, the bad quality of the food, or its not being given in sufficient quantities.

There are certain laws of nature indispensable to animal life, certain functions which must be supported. Physiologists inform us that the nourishment of the body is derived from the ingredients of the blood, two of the principal of which are serum and fibrine. The serum, when condensed or coagulated, forms albumen, the restorative element of fat and muscular fibre; the fibrine contained in the blood contributes largely to the formation of muscle or flesh. Animal and vegetable fibrine and albumen are precisely similar, and unless they form component parts of the food the animal will waste away. Fat, muscular fibre, and certain other substances, composing the animal frame, are constantly undergoing the process of exhaustion, through the effect of oxygen, which is taken into the system every moment of life by means of the organs of respiration. But no part of that oxygen remains in the body; it is expelled in the form of carbon and hydrogen, by exhalations from the skin, and the ordinary evacuations. The expenditure of carbon and hydrogen is increased by labor or exercise in an equal ratio as the number of exhalations are accelerated by that exercise. By this process the fat and muscular fibre are constantly in a state of exhaustion and renewal, and are supposed to be thoroughly renewed in the course of six or seven months; dependent, however, upon the amount of labor, and the uninterrupted health of the animal. The more expeditiously this renovation of the system takes place, the more perfect will be the condition of the subject. It is therefore evident that the nu-

tritive matter supplied by the food must exceed the exhaustion which takes place in young animals, to occasion their growth and increase the development of muscle and other tissues, and with adults it must be equivalent with the exhaustion to maintain the animal in a normal state.

It has been ascertained that such vegetable food as affords nourishment to animals abounds most with nitrogen; and that they require the least of those kinds which contain the largest quantities. But here it must be observed there is a limit to the presentation of food abounding too profusely with nutritive properties, which will speedily affect the animal partaking thereof. The blood-vessels will become distended, and other channels overcharged with an excess of their fluid; and upon the slightest appearance of the symptoms which indicate a disordered state of the circulation, unless medicines are presented which are calculated to relieve the system from the accumulation, aided by temporary abstinence, and indeed change of food, the health of the animal is sure to suffer.

Professor Playfair, who has made experiments on the quantity of nutritious matter contained in different kinds of food supplied to animals, found that in one hundred pounds of oats, eleven pounds represent the quantity of gluten wherewith flesh is formed, and that an equal weight of hay affords eight pounds of similar substance. Both hay and oats contain about sixty-eight per cent. of unazotised matter identical with fat, of which it must be observed a vast portion passes off from the animal without being deposited. By this calculation it appears that if a horse consumes daily four feeds of oats and ten pounds of hay, the nutriment which he derives will be equivalent to about one pound eleven ounces of muscle, and thirteen and a half pounds of superfluous matter, which, exclusively of water, nearly approximates the exhaustion of the system by perspiration and the various evacuations.

It is generally known that the embryo offspring partakes of the health or condition of the dam, therefore the food with which the mother is supplied must affect the foal. This is a subject too commonly disregarded by breeders; although it is constantly demonstrated after the foal comes into life. If a mare be supplied with food which produces relaxation, her foal will be in the same state; and constipation is recognized in the same manner. The propriety of supplying a brood-mare with the best and most suitable kinds of food during pregnancy cannot be too strongly impressed. In the management of young stock every effort should be made, by giv-



ing them food which is adapted to the purpose, to bring them to maturity as early as possible; by these means the texture and development of the bones, the sinews, and the muscles is greatly accelerated. The constitution of each animal must be consulted, and it is highly important, if the acme of condition is to be attained by animals when they arrive at an age of maturity, that the growth and gradual development of their frames should be composed of those healthy and invigorating materials, upon which the structure of condition can be raised. To accomplish this, hay, oats, and occasionally beans, must form the principal items of equine dietary, and grass should be provided only in limited supplies during the summer months. It is to giving growing stock unrestricted quantities of green food that breeders must ascribe a general cause for their disappointment, and it is by that practice that the kingdom is supplied with such vast numbers of worthless animals. Grass, it may be observed, loses two-thirds of its weight, and a greater proportion of bulk, when converted into hay; but that extraneous matter consists of moisture, possessing no portion of fibrine, consequently it contains none of those elements which increase muscular development. If a horse be supported upon grass alone, he must eat a vast quantity—equal to more than three times the proportion of hay—to derive an equivalent amount of nourishment; being very full of sap and moisture, it is quickly digested; consequently, the animal must be continually devouring it. This distends the stomach and bowels, and impairs the faculty of digestion; for the digestive powers require rest as well as the other organs of the body, if they are to be preserved in a healthy state. The muscular system is debilitated, and fat accumulates; flatulent cholic or gripes is produced, which not unfrequently becomes constitutional. Nothing can be more erroneous than the antiquated impression, that the purgative properties of young grass in the spring are conducive to the healthy state of the equine family. When the *modus operandi* of that description of food is explained, the supposition of its being calculated to produce beneficial effects must vanish. The young green herbage is extensively overcharged with sap and moisture, of a crude and acrimonious nature, and it exists so abundantly that a considerable portion of it cannot be taken up by the organs destined for the secretion of urine, or by the absorbent vessels of the body; a great quantity of this superfluous fluid, therefore, passes into the intestines, and is thus discharged in a watery state. But the mischief does not termi-

nate immediately on the subsiding of the purgative action; the absorbent vessels, having been overloaded, become distended and relaxed, and some time intervenes before they resume their healthy tone, under the most judicious treatment. This is clearly exemplified by the habitual tendency which many horses exhibit of having swelled legs. When this evil exists, any persons who entertain a doubt as to the primary cause may readily convince themselves, by investigating the course of treatment to which the animal has been subjected. Horses which are reared on wet, marshy land are invariably afflicted with this relaxed condition of the absorbent vessels of the legs. Constant supplies of green succulent food render these defects constitutional, and the most scientific stable management is often frustrated when such animals are required to perform ordinary labor; their legs fail, not from anatomical defects, but from the cause explained, which operates injuriously upon a structure which is naturally perfect.

Superficial judges of horses do not mark the difference between the appearance of a fat and a muscular-formed animal. If the bones are covered, the points filled out, and the general contour looks pleasing to the eye, they conceive that every requisite is accomplished. A more fallacious impression cannot exist. A horse of moderate pretensions, if in perfect condition, will prove himself infinitely superior in the quality of endurance or capability to perform work, than one of a higher character which is not in condition. If two horses are ridden side by side, at a moderate pace of seven or eight miles in the hour, on a warm day in the summer, one of which has been taken out of a grass field and the other fed on hay and corn, the difference will be very soon detected. The grass-fed horse will perspire profusely, yet the other will be cool and dry. This propensity to perspire likewise proves that the system of the former is replete with adipose deposit, and fluids destined to produce that substance; an unnecessary incumbrance, and in such quantities opposed to freedom of action.

Under an impression that an abundance of luxuriant grass will increase the flow of milk, it is frequently given to broodmares, but if it has the effect of producing relaxation it is exceedingly prejudicial. A moderate portion of good milk is far preferable to that which is weak and poor. Thoroughbred mares are not unfrequently deficient in their lacteal secretions, more so than those of a common description. It is obviously necessary that either class should be supplied

with good and nutritious food for the purpose of augmenting it when insufficient, but the nature of the food requires to be regulated by the constitution of the individual.

A mistaken notion of economy frequently induces persons to turn their horses into the grass fields during the summer months. A few words may serve to dispel that delusion. Twenty-two bushels of oats, allowing one bushel per week, which is sufficient for young stock or horses not in work, from the 15th of May to the 16th of October, may be estimated as the produce of a trifle more than half an acre of land. From ten to twelve hundredweight of hay may be estimated as the produce of another half-acre, although a ton and a half per acre is not more than an average crop on land in good condition. It will require an acre of grass-land capable of producing a ton and a-half of hay to support a horse during the above-named period. When the relative value of a horse which has been kept on hay and corn is compared with that of one which has been grazed, the verdict will be considerably against the latter.

#### GENERAL MANAGEMENT OF HORSES.

There is not a more important subject than the management of the colt, from the earliest period, and the preparing and fitting him for the duties that he has to perform. The mare is usually at heat at some period in the spring, varying from the middle of February to the latter end of May. The age of the foal is reckoned from January, therefore it is a matter of some consequence among racing men that the mare should foal early; for two or three months' difference in the age of the colt will materially influence the running at two years old. For mares of other classes, the months of March, April, and May, are the most favorable periods. There is, however, a strange difference in the length of the period of pregnancy in the mare, more so than in any other domesticated animal. The cause of this, or the circumstances that influence it, have never been satisfactorily explained. The writer of this sketch had two mares that were impregnated within two days of each other. One of them foaled a fortnight within the eleven months; the other did not drop her foal until four weeks after the expiration of the eleventh month. There was no possibility of a second impregnation.

The mare needs not to be taken from moderate work because she is pregnant. Exercise will be of advantage to

her rather than otherwise, and may be continued almost to the period of her expected parturition. She should, however, be carefully watched, that her labor-pains may not come upon her unawares. She will probably require, when half the period of pregnancy is past, a little addition made to her food. Any possible symptoms of abortion should also be watched, for these will now, if ever, occur. They will probably be attributable to being overworked or not worked at all, or to being over-fed or half starved. It should also be recollected that the mare which has once aborted, is subject to a repetition of this accident, and that all the mares in the pasture are subject to the same mishap, from a strange species of sympathy.

A day or two after the foal is dropped, providing the weather is fine, it may be turned, with its dam, into a sheltered paddock, in which there is a hovel for security from the wind and the rain. Hay, corn, and bran mashes must be allowed, if it is early in the season, or the grass has scarcely begun to shoot. There is nothing so detrimental to the colt as insufficient food. It should be regarded as a fundamental principle in breeding, that if the growth of the colt at any time is checked by starvation, beauty, energy, and stoutness will rarely be displayed in after years.

In five or six months, according to the growth of the foal, the weaning may take place. The colt should be confined to a stable or other building until he becomes a little reconciled to the loss of his dam.

Too great a distinction, however, is often made between the colts, according to the labor for which they are destined. The one that is designed for somewhat superior service has a hovel in which he is sheltered, while the other is probably exposed to the biting blast, with no food but what he can gather from the frozen ground, except perhaps a morsel of hay and straw, and that not of the best quality, when the herbage is buried in the snow. There is nothing gained by this system of starvation; the farmer may depend upon it, that if, from false economy, the colt is half starved, and his growth arrested, his value will be materially injured as long as he lives. The author of the work on "The Extent and Obligation of Humanity to Brutes," thus describes this neglected creature: "The foal that has been left to struggle on as he can, becomes poor and dispirited. He is shrinking under the hedge, cold and shivering, with his head hanging down, and the rheum distilling from his eyes. If he is made to move, he listlessly drags his limbs along, evidently weak,

and generally in pain. He is a sad specimen of poverty, misery, and cruelty."

The purpose for which the animal is adapted will determine the age when the progress of breaking must commence. Thorough-bred ones are taken in hand in the summer, after they have attained their first year. Those which are destined for other employment will not require the attention of the breaker till they are three years old. This is a process on which will materially depend the temper and value of the horse, and the pleasure of the rider. The foal should be handled and haltered, and led about by the person who has the chief care of him, and whose conduct towards him should always be kind. "The principle," says the author of "The Horse," "on which the after-usefulness of the animal is founded, his early attachment to, and confidence in man, and obedience, resulting principally from these."

A horse is well-broken when he has been taught implicit and cheerful obedience to his rider or driver, and dexterity in performance of his work. A dogged, sullen, spiritless submission may be enforced by the cruel and brutal usage to which the breaker so frequently has recourse; but that prompt and eager response to the slightest intimation of the rider's will—that manifest aim to anticipate every wish, which gives to the horse so much of his value, must be founded on habitual confidence and attachment. The education of the horse should be like that of the child. Pleasure should be as much as possible associated with the early lessons; while firmness, or if need be, coercion, must establish the habit of obedience.

It is surprising how soon, under a system of kind management, the animal which has been accustomed to go where he pleased, and to do as he thought fit, may be taught to yield up his will to another, and to obey with alacrity his master's bidding. If there is a kind-hearted and faithful servant about the premises who will undertake this task, the breeder is fortunate: for, without this, he is often compelled to resign his colt to the tender mercies of a colt-breaker—a man who seldom has any conception of obtaining his object by the moral influence which kindness would give him over the youngster, but who has too frequent recourse to violence, and that of the most outrageous kind, until the colt becomes a dull, dispirited, useful, but desponding and ill-treated slave through life, or, cherishing a deep feeling of wrong and a spirit of revenge, becomes determinedly vicious and dangerous.

Having weathered the second winter, the education of the farmer's horse may be pursued. He may be bitted. How much depends upon the application of this little coercive instrument, the bit! The first bit should always be a large one. It may be contrived so as not to hurt the mouth in the slightest degree. The colt may be permitted to champ and play with it an hour or two at a time, for a few successive days. Then portions of the harness may be put upon him; and, by-and-by, the blinkers; and, a little after that, he may go as centre horse in a team of three. If he has been kindly and well-managed, it is a great chance if he does not go quietly enough, and, in a day or two, begin to pull with the rest. Not many days need to pass before the most difficult of all the manoeuvres of the cart, the backing, is tried; and it will succeed oftener than they who see the horrible cruelties that are inflicted on the mouth of the horse would think to be possible. The author of this sketch is not advocating the humoring and spoiling of the horse, but he is showing how many lessons may be inculcated by patience and kindness, which brute force will fail to accomplish.

The breaking being accomplished, the management of the horse will vary according to his breed and destination; but the good usage of our domesticated slaves should be regarded as a principle that ought never to be violated. The agricultural horse is seldom over-worked, and on large farms is generally well fed; perhaps, in many cases, too much above his work. This, however, is an error on the right side.

There are many acts of cruelty committed in the farmer's stable, resulting more from carelessness and thoughtlessness than absolute brutality. In almost every stable there is some horse more powerful or greedy than his neighbors, who robs them of the greater part of their share of the food. The victims are usually either old or young horses with imperfect mouths. The farmer's stable should be oftener divided into separate stalls than it usually is. The simple bails afford a very insufficient security against the thefts of a greedy neighbor. The farmer would certainly reap the advantage of this altered plan in the increased health of some of his team, and their increased capability of labor.

Connected with this is another circumstance, with regard to which the farmer should be always on the alert—the stupid and cruel dislike which the driver frequently entertains towards some particular horse in his team. This is a crime that should never be forgiven; nor should the secret administration of certain favorite and powerful, and too fre-

quently, injurious, drugs. This practice is often carried to an extent that is scarcely credible. The person who practices this imposition, whatever be his motives—often connected with the wished-for good appearance of his team—should be immediately dismissed; and it should be a golden rule that no drug should be kept or used in a stable without the master's knowledge and permission.

A simple but invaluable appendage to the cart-stable is the *nose-bag*. In order that the lungs of the horse may have their full play, and especially that the speed of the horse may not be impeded, an exceedingly small stomach was given to him. It is, consequently, soon emptied of food, and hunger, and languor, and indisposition, and inability to work, speedily succeed. At length food is set before him; he falls ravenously upon it; he swallows it faster than his contracted stomach can digest it; the stomach becomes overloaded; he cannot, from the peculiar construction of that organ, get rid of the load by vomiting, and the stomach, or some of the vessels of the brain become ruptured, and the animal dies. The farmer attributes this to an unknown or accidental cause. and dreams not that it is, in the great majority of cases, to be traced to voracious feeding after hard work and long fasting. The nose-bag is a simple but a kind contrivance, and an effectual preventive. No cart-horse on a journey of more than four or five hours should be suffered to leave the farmer's yard without it.

A very slight inspection of the animal will always enable the owner to determine whether he is too well fed or not sufficiently fed. The size of the horse, and the nature of the work, and the season of the year, will make considerable difference in the quantity and the quality of the food. The grand principles of feeding, with reference to agricultural horses, are to keep the animal rather above his work, to give him good and wholesome food, and by the use of the nose-bag or other means, never to let him work longer than the time already mentioned without being baited.

The horse of quick work should be allowed as much as he will eat, care being taken that more is put into the manger than he will readily dispose of; and that the corn be consumed before the hay is given; if the former be not eaten up with an appetite, it must be removed before the stable is shut up. The quantity actually eaten will depend on the degree of work and the natural appetite of the horse; but it may be averaged at about sixty-six pounds of chaff, seventeen pounds and a half of beans, and seventy-seven pounds of oats per week.

The *watering* of the horse is a very important but disregarded portion of his general management. The kind of water has not been sufficiently considered. The difference between what is termed *hard* and *soft* water is a circumstance of general observation. The former contains certain saline principles which decompose some bodies, as appears in the curdling of soap, and prevent the decomposition of others, as in the making of tea, the boiling of vegetables, and the process of brewing. It is natural to suppose that these different kinds of water would produce somewhat different effects on the animal frame; and such is the fact. Hard water, freshly drawn from the well, will frequently roughen the coat of the horse unaccustomed to it, or cause griping pains, or materially lessen the animal's power of exertion. The racing and the hunting groom are perfectly aware of this, and so is the horse, for he will refuse the purest water from the well, if he can obtain access to the running stream, or even the turbid pool. Where there is the power of choice, the softer water should undoubtedly be preferred.

The temperature of the water is of far more consequence than its hardness. It will rarely harm, if taken from the pond or the running stream, but its coldness, when recently drawn from the well has often been injurious; it has produced colic, spasm, and even death.

There is often considerable prejudice against the horse being fairly supplied with water. It is supposed to chill him, to injure his wind, or to incapacitate him for hard work. It certainly would do so, if, immediately after drinking his fill, he were galloped hard, but not if he were suffered to quench his thirst more frequently when at rest in the stable. The horse that has free access to water will not drink so much in the course of the day as another, who, in order to cool his parched mouth, swallows as fast as he can, and knows not when to stop.

A horse may with perfect safety be far more liberally supplied with water than he generally is. An hour before his work commences he should be permitted to drink a couple of quarts. A greater quantity might probably be objected to. He will perform his task far more pleasantly and effectively than with a parched mouth and tormenting thirst. The prejudice both of the hunting and the training groom on this point is cruel, as well as injurious. The task of the journey being accomplished, and the horse having had his head and neck dressed, his legs and feet washed, before his body is cleaned he should have his water. When dressed,



his corn may be offered to him, which he will readily take; but water should never be given immediately before or after the corn.

The preparatory work and treatment of hacks and carriage-horses scarcely varies, if the owner desires to have them in first-rate order. The most extraordinary notions prevail concerning the hardihood of horses, and the best means of securing that valuable faculty. It is alleged that those which are bred in the mountainous districts of Wales and Scotland are highly gifted with this property. It is true they bear exposure to great inclemency of weather, and live on scanty food. Thus, reasoning by analogy, persons fancy that by demi-starvation and exposure to inclemency a hardy animal may be reared. There cannot be a more palpable error. The mountaineers are not able to work in their native state; they must be well supplied with good nutriment when their active services are required, and that, with dry shelter, in a well-ventilated building, is the keystone to physical power and endurance.

#### MANAGEMENT OF FARM HORSES.

Agriculturists find it to their advantage to keep their horses in the stables and yards throughout the summer, in preference to turning them out into the pasture fields. The manure which they make more than compensates for the expense of bringing their food to them. In the winter, an allowance of Swedes saves a vast quantity of hay and corn, and keeps the animals cool: they are preferable to carrots. Bran is useful, but it should never be given to them, or to any other horses, without being previously scalded. Some persons have a most reprehensible practice of driving their horses into ponds to drink, while attached to each other by their gearing or harness; many have been drowned in consequence. This class of men have also a most abominable propensity for giving drugs of various kinds; a stern injunction should be laid against it. The plan of cutting their hay into chaff is to be recommended, as it saves waste; where this is not done, the quantity of food destroyed, but not consumed, in cart stables is enormous.

## CHAPTER VIII

## DISEASES OF HORSES.

It may be readily supposed that the animal doomed to the manner of living which every variety of the horse experiences, will be peculiarly exposed to numerous forms of suffering; every natural evil will be aggravated, and many new and formidable sources of pain and death will be super-added.

Interest and humanity require that we should become acquainted with the nature, and causes, and remedy of the diseases of the horse.

The principal diseases of the horse are connected with the circulatory system. From the state of habitual excitement in which the animal is kept, in order to enable him to execute his task, the heart and the blood-vessels will often act too impetuously; the vital fluid will be hurried along too rapidly, either through the frame generally or some particular part of it, and there will be *congestion*, accumulation of blood in that part, or *inflammation*, either local or general, disturbing the functions of some organ or of the whole frame.

## Congestion.

Take a young horse on his first entrance into the stables; feed him somewhat highly, and what is the consequence? He has swellings of the legs, or inflammation of the joints, or perhaps of the lungs. Take a horse that has lived somewhat above his work, and gallop him to the top of his speed: his nervous system becomes highly excited—the heart beats with fearful rapidity—the blood is pumped into the lungs faster than they can discharge it—the pulmonary vessels become gorged, fatigued, and utterly powerless—the blood, arrested in its course, becomes viscid, and death speedily ensues. We have but one chance of saving our patient—the instantaneous and copious abstraction of blood; and only one means of preventing the recurrence of this dangerous state; namely, not suffering too great an accumulation of the sanguineous fluid by over-feeding, and by regular and system-

atic exercise, which will inure the circulatory vessels to prompt and efficient action when they are suddenly called upon to exert themselves. This is an extreme case, but the cause and the remedy are sufficiently plain.

Again, the brain has functions of the most important nature to discharge, and more blood flows through it than through any other portion of the frame of equal bulk. In order to prevent this organ from being oppressed by a too great determination of blood to it, the vessels, although numerous are small, and pursue a very circuitous and winding course. If a horse highly fed, and full of blood, is suddenly and sharply exercised, the course of the blood is accelerated in every direction, and to the brain among other parts. The vessels that ramify on its surface, or penetrate its substance, are completely distended and gorged with it; perhaps they are ruptured, and the effused blood presses upon the brain; it presses upon the origins of the nerves, on which sensation and motion depend, and the animal suddenly drops powerless. A prompt and copious abstraction of blood, or, in other words, a diminution of this pressure, can alone save the patient. Here is the nature, the cause, and the treatment of

### Apoplexy.

Sometimes this disease assumes a different form. The horse has not been performing more than his ordinary work, or perhaps he may not have been out of the stable. He is found with his head drooping and his vision impaired. He is staggering about. He falls, and lies half-unconscious, or he struggles violently and dangerously. There is the same congestion of blood in the head, the same pressure on the nervous organs, but produced by a different cause. He has been accustomed habitually to overload his stomach, or he was, on the previous day, kept too long without his food, and then he fell ravenously upon it, and ate until his stomach was completely distended and unable to propel forward its accumulated contents. Thus distended, its blood-vessels are compressed, and the circulation through them is impeded, or altogether suspended. The blood is still forced on by the heart, and driven in accumulated quantity to other organs, the brain among the rest; and there congestion takes place, as just described, and the animal becomes sleepy, unconscious, and, if he is not speedily relieved, he dies. This, too, is apoplexy; the horseman calls it

### Stomach Stagers.

Its cause is improper feeding. The division of the hours of labor, and the introduction of the *nose-bag*, have much diminished the frequency of its occurrence. The remedies are plain; bleeding, physicing, and the removal of the contents of the stomach by means of a pump contrived for that purpose.

### Congestions of Other Kinds

occasionally present themselves. It is no uncommon thing for the blood to loiter in the complicated vessels of the

#### Liver,

until the covering of that viscus has burst, and an accumulation of coagulated black blood has presented itself. This congestion constitutes the

### Swelled Legs

to which so many horses are subject when they stand too long idle in the stable; and it is a source of many of the accumulations of serous fluid in various parts of the body, and particularly in the chest, the abdomen, and the brain.

*Inflammation* is opposed to *congestion*, as consisting in an active state of the capillary arterial vessels; the blood rushes through them with far greater rapidity than in health, from the excited state of the nervous system by which they are supplied.

### Inflammation

is either *local* or *diffused*. It may be confined to one organ, or to a particular portion of that organ; it may involve many neighboring ones, or it may be spread over the whole frame. In the latter case it assumes the name of

### Fever.

Fever is general or constitutional inflammation, and it is said to be

#### Sympathetic, or Symptomatic

when it can be traced to some local affection or cause, and

### **Idiopathic**

when we cannot so trace it. The truth probably is, that every fever has its local cause; but we have not a sufficient knowledge of the animal economy to discover that cause.

Inflammation may be considered with reference to the membranes which it attacks.

### **The Mucous Membrane**

line all the cavities that communicate with the external surface of the body. There is frequent inflammation of the membrane of the mouth.

### **Blain, or Glysynthrax,**

is a vesicular enlargement which runs along the side of the tongue. Its cause is unknown. It should be lanced freely and deeply, and some aperient medicine administered.

### **Barbs, or Paps,**

are smaller enlargements, found more in the neighborhood of the bridle of the tongue. They should never be touched with any instrument; a little cooling medicine will generally remove them.

### **Lampas**

is inflammation of the palate, or enlargement of the bars of the palate. The roof of the mouth may be slightly lanced, or a little aperient medicine administered; but the sensibility of the mouth should never be destroyed by the application of the heated iron.

### **Canker, and Wounds in the Mouth,**

from various causes, will be best remedied by diluted tincture of myrrh, or a weak solution of alum.

### **Foreign Bodies in the Gullet**

may be generally removed by means of the probang used in the hove of cattle; or the cesophagus may be opened, and the obstructing body taken out.

It is on the mucous membranes that

### Poisons

principally exert their influence. The *yew* is the most frequent vegetable poison. The horse may be saved by timely recourse to equal parts of vinegar and water ejected into the stomach, after the poison has been as much as possible removed by means of the stomach-pump. For arsenic or corrosive sublimate there is rarely any antidote.

### Spasmodic Colic

is too frequently produced by exposure to cold, the drinking of cold water, or the use of too much green meat. The horse should be walked about, strong friction used to the belly, and spirit of turpentine given in doses of two ounces, with an ounce each of laudanum and spirit of nitrous æther, in warm water, ale or gruel. If the spasm is not soon relieved, the animal should be bled, and injections of warm water with a solution of aloes thrown up, if constipation exists. This spasmodic action of the bowels, when long continued, is liable to produce

### Introsusception, or entanglement,

of them; and the case is then hopeless.

### Superpurgation

often follows the administration of a too strong or improper dose of physic. The torture which it produces will be evident by the agonized expression of the countenance, and the frequent looking at the flanks. Plenty of thin starch or arrowroot should be given both by the mouth and by injection; and twelve hours having passed without relief being experienced, chalk, catechu, and opium, should be added to the gruel.

### Worms

in the intestines are not often productive of much mischief, except they exist in very great quantities. Small doses of emetic tartar or calomel, with a little ginger, may be given to the horse half an hour before his first meal, in order to expel the round white worm; it must be worked off with linseed-oil or aloes, and injections of linseed-oil or aloes will usually remove the ascarides, or needle-worms.

### The Respiratory Passages

are all lined by the mucous membrane.

#### Catarrh,

or *cold*, inflammation of the upper air passages, should never be long neglected. A few mashes or a little medicine will usually remove it. If it is neglected, and, occasionally, in defiance of all treatment, it will degenerate into other diseases. The larynx may become the principal seat of inflammation.

#### Laryngitis

will be shown by extreme difficulty of breathing, accompanied by a strange roaring noise, and an evident enlargement and great tenderness of the larynx when felt externally. The windpipe must be opened in such case, and the best advice will be necessary. Sometimes the subdivisions of the trachea, before or when it first enters the lungs, will be the part affected, and we have *bronchitis*. This is characterized by a quick and hard breathing, and a peculiar wheezing sound, with the coughing up of mucus. Here, too, decisive measures must be adopted, and a skillful practitioner employed. His assistance is equally necessary in

#### Distemper, Influenza and Epidemic Catarrh,

names indicating varieties of the same disease, and the product of atmospheric influence; differing to a certain degree in every season, but in all characterized by intense inflammation of the mucous surfaces, and rapid and utter prostration of strength, and in all demanding the abatement of that inflammation, and yet little expenditure of vital power.

Cough may degenerate into

#### Inflammation of the Lungs ;

or this fearful malady may be developed without a single premonitory symptom, and prove fatal in twenty-four or even in twelve hours. It is mostly characterized by deathly coldness of the extremities, expansion of the nostril, redness of its lining membrane, singularly anxious countenance, constant gazing at the flank, and an unwillingness to move. A successful treatment of such a case can be founded only on

the most prompt and fearless and decisive measures; the lancet should be freely used. Counter-irritants should follow as soon as the violence of the disease is in the slightest degree abated; sedatives must succeed to them; and fortunate will he be who often saves his patient after all the decisive symptoms of pneumonia are once developed.

Among the consequences of these severe affections of the lungs, are

#### Chronic Cough,

not always much diminishing the usefulness of the horse, but strangely aggravated at times by any fresh accession of catarrh, and too often degenerating into

#### Thick Wind,

which always materially interferes with the speed of the horse, and in a great proportion of cases terminates in broken wind. It is rare, indeed, that either of these diseases admits of cure. That obstruction in some part of the respiratory canal, which varies in almost every horse, and produces the peculiar sound termed *roaring*, is also rarely removed. Roaring is a malady of such frequent occurrence and such disastrous consequences, that it will be found more discursively treated upon in the concluding pages.

#### Glanders,

the most destructive of all diseases to which the horse is exposed, is the consequence of breathing the atmosphere of foul and vitiated stables. It is the winding up of almost every other disease, and in every stage it is most contagious. Its most prominent symptoms are a small but constant discharge of sticky matter from the nose; an enlargement and induration of the glands beneath and within the lower jaw, on one or both sides; and before the termination of the disease chancreous inflammation of the nostril on the same side with the enlarged gland. Its contagiousness should never be forgotten, for if a glandered horse is once introduced into a stable, almost every inhabitant of that stable will sooner or later become infected and die.

#### The Urinary and Genital Organs

are also lined by mucous membranes. The horse is subject to



### **Inflammation of the Kidneys,**

from eating musty oats or mow-burnt hay, from exposure to cold, injuries of the loins, and the imprudent use of diuretics. Bleeding, physic, and counter-irritants over the region of the loins should be had recourse to.

### **Diabetes, or Profuse Staling,**

is difficult to treat. The inflammation that may exist should first be subdued, and then opium, catechu, and the *Uva ursi* administered.

### **Inflammation of the Bladder**

will be best alleviated by mucilaginous drinks of almost any kind, linseed-gruel taking precedence of all others.

### **Inflammation of the Neck of the Bladder,**

evinced by the frequent and painful discharge of small quantities of urine, will yield only to the abstraction of blood and the exhibition of opium. A catheter may be easily passed into the bladder of the mare, and urine evacuated; but it will require a skilled veterinary surgeon to effect this in the horse.

### **A Stone in the Bladder**

is readily detected by the practitioner, and may be extracted with comparative ease. The sheath of the penis is often diseased, from the presence of corrosive mucous matter. This may easily be removed by warm soap and water.

To the mucous membranes belong the conjunctival tunic of the eye; and the diseases of the eye generally may be here considered.

### **A Scabby Itchiness**

on the edge of the eyelids may be cured by a diluted nitrated ointment of mercury.

### **Warts**

should be cut off with the scissors, and the roots touched with lunar caustic.

### **Inflammation of the Haw**

should be abated by the employment of cooling lotions, but

that useful defence of the eye should never, if possible, be removed.

### Common Ophthalmia

will yield as readily to cooling applications as inflammation of the same organ in any other animal, but there is another species of inflammation commencing in the same way as the first, and for awhile apparently yielding to treatment, but which changes from eye to eye, and returns again and again, until blindness is produced in one or both organs of vision. The most frequent cause is hereditary predisposition. The reader cannot be too often reminded that the qualities of the sire, good or bad, descend, and scarcely changed, to his offspring. How

### Moon-Blindness

was first produced no one knows, but its continuance in our stables is to be traced to this cause principally, or almost alone; and it pursues its course until cataract is produced, for which there is no remedy.

### Gutta Serena (Palsy of the Optic Nerve)

is sometimes observed, and many have been deceived, for the eye retains its perfect transparency. Here, also, medical treatment is of no avail.

The serous membranes are of great importance. The brain and spinal marrow, with the origins of the nerves, are surrounded by them; so are the heart, the lungs, the intestinal canal, and the organs whose office it is to prepare the generative fluid.

### Inflammation of the Brain.

Mad staggers fall under this division. It is inflammation of the meninges, or envelopes of the brain, produced by over-exertion, or by any of the causes of general fever, and it is characterized by the wildest delirium. Nothing but the most profuse blood-letting, active purgation, and blistering the head, will afford the slightest hope of success.

### Tetanus, or Lock-Jaw,

is a constant spasm of all the voluntary muscles, and particularly those of the neck, the spine, and the head, arising from the injury of some nervous fibril—that injury spreading to

the origin of the nerve—the brain becoming affected, and universal and unbroken spasmodic action being the result. Bleeding, physicing, blistering the course of the spine, and the administration of opium in enormous doses, will alone give any chance of cure.

### Epilepsy

is not a frequent disease in the horse, but it seldom admits of cure. It is also very apt to return at the most distant and uncertain intervals.

### Palsy

is the suspension of nervous power. It is usually confined to the hinder limbs, and sometimes to one limb only. Bleeding, physicing, antimonial medicines, and blistering of the spine, are most likely to produce a cure, but they too often utterly fail of success.

### Rabies, or Madness,

is evidently a disease of the nervous system, and once being developed, is altogether without remedy. The utter destruction of the bitten part with the lunar caustic, soon after the infliction of the wound, will, however, in a great majority of cases, prevent that development.

### Pleurisy,

or inflammation of the serous covering of the lungs and the lining of the cavity of the chest, is generally connected with inflammation of the substance of the lungs; but it occasionally exists independent of any state of those organs. The pulse is in this case hard and full, instead of being oppressed; the extremities are not so intensely cold as in pneumonia; the membrane of the nose is little reddened, and the sides are tender. It is of importance to distinguish accurately between the two, because in pleurisy more active purgation may be pursued, and the effect of counter-irritants will be greater, from their proximity to the seat of disease. Copious bleedings and sedatives here also should be had recourse too. It is in connection with pleurisy that a serous fluid is effused in the chest, the existence and the extent of which may be ascertained by the practiced ear, and which in many cases may be safely evacuated.

The heart is surrounded by a serous membrane—the peri-

cardium, that secretes a fluid, the interposition of which prevents any injurious friction or concussion in the constant action of this organ. If this fluid increases to a great degree, it constitutes

### **Dropsy of the Heart,**

and the action of the heart may be impeded or destroyed. In an early stage it is difficult to detect, and in every stage difficult to cure.

The heart itself is often diseased; it sympathizes with the inflammatory affection of every organ, and therefore is itself occasionally inflamed.

### **Carditis, or Inflammation of the Heart,**

is characterized by the strength of its pulsations, the tremor of which can be seen, and the sound can be heard at a distance of several yards. Speedy and copious blood-letting will afford the only hope of cure in such a case.

The outer coat of the stomach and intestines is composed of a serous membrane—the peritoneum, which adds strength and firmness to their textures, attaches and supports and confines them in their respective places, and secretes a fluid that prevents all injurious friction between them. This coat is exceedingly subject to inflammation, which is somewhat gradual in its approach. The pulse is quickened, but small; the legs cold; the belly tender; there is a constant pain, and every motion increases it; there is also rapid and great prostration of strength. These symptoms will sufficiently characterize

### **Peritoneal Inflammation.**

Bleeding, aperient injections, and extensive counter-irritation, will afford the only hope of cure.

The time for

### **Castration**

varies according to the breed and destiny of the horse. On the farmer's colt it may be effected when the animal is not more than four or five months old, and it is comparatively seldom that a fatal case occurs. For other horses, much depends on their growth, and particularly on the development of their fore-quarters. An improvement has been effected in the old mode of castrating, by opening the scrotum, and

the division of the cord by the knife, instead of the heated iron.

### Synovial or Joint Membranes

are interposed between the divisions of the bones, and frequently between the tendons, in order to secrete a certain fluid that shall facilitate motion and obviate friction. Occasionally the membrane is lacerated, and the synovia escapes. This is termed

### Opened Joint,

and violent inflammation rapidly ensues. The duty of the practitioner is to close this opening as quickly as possible. Superacetate of lead one part, and water four parts, may be applied or injected into the cavity, frequently with success. A great deal of inflammation and engorgement are produced around the opening, partially, if not altogether, closing it, or at least enabling the coagulated synovia to occupy and obliterate it. Perhaps, in order to secure the desired result, the whole of the joint should be blistered. After this a bandage should be firmly applied, and kept on as long as it is wanted. If there is any secondary eruption of the synovia, the cautery must be had recourse to.

### Spavin

is an enlargement of the inner side of the hock. The splint-bones support the inferior layer of those of the hock, and as they sustain a very unequal degree of concussion and weight, the cartilaginous substance which unites them to the shank-bone takes on inflammation. It becomes bony instead of cartilaginous; and the disposition to this change being set up in the part, bony matter continues to be deposited, until a very considerable enlargement takes place, known by the name of *spavin*, and there is considerable lameness in the hock-joint. The bony tumor is blistered, and probably fired, but there is no diminution of the lameness until the parts have adapted themselves, after a considerable process of time, to the altered duty required of them; and then the lameness materially diminishes, and the horse becomes, to a very considerable extent, useful. Curb is an enlargement of the back of the hock, three or four inches below its point. It is a strain of the ligament which there binds the tendons down in their place. The patient should be subjected to almost absolute rest; a blister should be applied over the back

of the tumor, and occasionally firing will be requisite to complete the cure. Near the fetlock, and where the tendons are exposed to injury from pressure or friction, little bags or sacs are placed, from which a lubricating mucous fluid constantly escapes. In the violent tasks which the horse occasionally has to perform, these become bruised, inflamed, enlarged, and hardened, and are termed

### **Windgalls.**

They blemish the horse, but are no cause of lameness after the inflammation has subsided, unless they become very much enlarged. The cauterization will then be the best cure. Immediately above the hock, enlargements of a similar nature are sometimes found, and as they project both inwardly and outwardly, they are termed

### **Thorough-pins.**

They are seldom a cause of lameness; but they indicate great, and perhaps injurious, exertion of the joint. On the inside of the hock a tumor of this kind, but of a more serious nature, is found. It is one of these enlarged mucous bags, but very deeply seated, and the subcutaneous vein of the hock passing over it, the course of the blood through the vein is thus in some measure arrested, and a portion of the vessel becomes distended. This is a serious evil, since, from the deep-seatedness of the mucous bag, it is almost impossible to act effectually upon it. It is termed

### **Bog, or Blood Spavin.**

The cellular tissue which fills the interstices of the various organs, or enters into their texture, is the seat of many diseases. From the badness of the harness, or the brutality of the attendant, the poll of the horse becomes contused. Inflammation is set up; considerable swelling ensues; an ulcerative process soon commences, and chasms and sinuses of the most frightful extent begin to be formed. The withers, also, are occasionally bruised, and the same process takes place there, and sinuses penetrate deep beneath the shoulder, and the bones of the withers are frequently exposed. These abscesses are termed

### **Poll Evil, and Fistulous Withers,**

and in the treatment of them the horse is often tortured to a dreadful extent. A better mode of management has, however, been introduced; setons are passed through the most dependent parts; no collection of sanious fluid is permitted to exist, and milder stimulants are applied to the surface of the ulcer.

### **An Abscess**

of a peculiar character is found between the branches of the lower jaw in young horses. It is preceded by some degree of fever. It is usually slow in its progress, but at length it attains a considerable size, including the whole of the cellular tissue in that neighborhood. There is one uniform mass of tumefaction. This is

### **Strangles.**

It seems to be an effort of Nature to get rid of something that oppresses the constitution, and the treatment of it is now simple and effectual. It is encouraged by fomentations and blisters. It is punctured as soon as the fluctuation of a fluid within it can be fairly detected; the puss speedily escapes, and there is an end of the matter.

### **Farcy.**

While the arterial capillaries are engaged in building up the frame, the absorbents are employed in removing that which is not only useless, but would be poisonous and destructive. They take up the matter of glanders and of every ulcerating surface, and they are occasionally irritated, inflamed, and ulcerated, from the acrimonious nature of the poison which they carry; the absorbents are furnished with numerous valves; the fluid is for awhile arrested by them, and there the inflammation is greatest, and ulceration takes place. This is the history of the farcy-cords and buds. Farcy is a highly contagious disease, whether or not it be connected with glanders. It, however, occasionally admits of cure, from the application of the cautery to the buds, and the administration of the corrosive sublimate or the sulphate of iron internally.

The skin of the horse is subject to various diseases. Large pimples or lumps suddenly appear on it, and after remaining a few days, the cuticle peels off, and a circular scaly spot is left. This is called

### Surfeit.

The cause is obscure, but principally referable to indigestion. A slight bleeding will always be serviceable. Physic rarely does good, but alteratives composed of nitre, black antimony, and sulphur, will be very beneficial.

### Mange

is a disease of a different character; it is the curse of the stable into which it enters, for it will almost certainly affect every horse. Thorough dressings with Barbadoes tar and linseed oil, in the proportion of one of the former to three of the latter, will be the most effectual external application, while alteratives and physic should be given internally

### Hide-Bound

is a very appropriate term for a peculiar sticking of the hide to the ribs, when a horse is out of condition. The subcutaneous adipose matter is all absorbed. The alterative above recommended will be very useful here.

The legs, and the hind ones more than the fore ones, are subject to frequent, and great, and obstinate swellings, attended with great pain and considerable fever. It is acute inflammation of the cellular substance of the legs. Physic and diuretics and tonics, if there is the slightest appearance of debility, are the proper means of cure. Friction and bandages will also be used occasionally. There are two causes, diametrically opposed to each other, which occasion the legs to swell: an inspissated or plethoric condition of the blood, the other, debility of the system. The remedy must depend on the cause; in the first case moderate doses of physic, combined with diuretics, according to a formula given at the conclusion; in the other case, tonics, with good keep, are necessary.

### Grease

is an undue secretion of the fluid which was designed to lubricate the skin of the heels; and that secretion is also altered in quality. The hind legs begin to swell—a fluid exudes from the heels—the hairs of the heels become erect like so many bristles, and the skin of the heel is hot and greasy. Soon afterwards cracks appear across the heel: they discharge a thick and offensive matter, and then deepen. They



spread up the leg, and so does the tumefaction of the part. In process of time the skin, inflamed and ulcerated, undergoes an alteration of structure; prominences or granulations appear on it, assuming the appearance of a collection of grapes, or the skin of a pine-apple. They increase, and a fetid discharge appears from the crevices between them.

The cause is generally neglect of the horse. He is suffered to stand in the stable with his heels cold and wet, which necessarily disposes them to inflammation and disease.

In the first stage of grease, bran, or turnip, or carrot poultices will be serviceable, with moderate physic. Then astringents must be employed; and the best are alum or sulphate of copper in powder, mixed with several times the quantity of bole Armenian, and sprinkled on the sores. These should be alternated every three or four days. The grapy heels are a disgrace to the stable in which they are found, and admit not of radical cure.

### Splints

are bony enlargements, generally on the inside of the leg, arising from undue pressure on the inner splint-bone; and this is either caused by the natural conformation of the leg, or violent blows on it. These excrescences will often gradually disappear, or will yield to a simple operation, or to the application of the hydriodate of potash or blister ointments.

### Sprains,

if neglected, occasionally become very serious evils. Rest, warm fomentations, poultices, or, in bad cases, blistering, are the usual remedies.

### Windgalls,

if they are of considerable size, or accompanied by much inflammation or lameness, will find in a blister the most effectual remedy.

### Sprains of the Fetlock

demand prompt and severe blistering: nothing short of this will produce a permanent cure.

### Sprains of the Pastern and Coffin Joints

demand still more prompt and decisive treatment. If neg-

lected, or inefficiently managed, the neighboring ligaments will be involved, more extensive inflammation will be set up, and bony matter, under the name of

### **Ring-bone,**

will spread over the pasterns and cartilages of the foot. Firing alone will, in the majority of cases, be efficient here.

### **Inflammation of the Foot, or Acute Founder.**

In speaking of the structure of the foot, the laminae, or fleshy plates on the front and sides of the coffin-bone, were described. From over-exertion, or undue exposure to cold or wet, or sudden change from cold to heat, inflammation of these laminae is apt to occur; and a dreadfully painful disease it is. It is easily detected by the heat of the feet, and the torture which is produced by the slightest touch of the hammer. The shoe must be removed, the sole well pared out, plentiful bleeding from the toe had recourse to, the foot well poulticed, and cooling medicines resorted to. The bleeding should be repeated, if manifest benefit is not procured, and cloths dipped in dissolved nitre, which are colder than the common poultice, should be substituted. After this, a poultice around the foot and pastern should succeed. Little food should be given, and that must consist of mashies and a cooling diet.

### **Pumiced Feet.**

This is one of the consequences of inflamed feet. The sole of the foot becomes flattened, or even convex, by the pressure of the weight above. There is no cure here, and the only palliation of the evil is obtained from the application of a shoe so beveled off from the crust that it shall not press upon or touch the sole. This, however, is only a temporary palliation, for the sole will continue to project, and the horse will be useless.

### **Contracted Feet.**

By this is meant an increase in the length of the foot, and a gradual narrowing as the heels are approached; and, as the necessary consequence of this, a diminution of the width of the foot, and a concavity of the sole. In point of fact, the whole of the foot, including the coffin-bone, be-

comes narrowed, and consequently elongated. This change of form is accompanied by considerable pain; the action of the horse is altered; there is a shortened tread, and a hesitating way of putting the foot to the ground.

The frog and heel would expand when the weight of the horse descends and is thrown upon them, but the nailing of the shoe at the heels prevents it. Thence the pain and lameness is obviated by a very simple method, put four or five nails in the shoe on the outside, and only two on the inside. There is then sufficient room for the natural expansion to take place, and the foot and action of the horse are little or not at all changed. This is an admirable contrivance, and recourse should always be had to it.

### The Navicular Joint Disease.

There are many horses with open and well-formed feet that are lame. In every motion of the foot, there is a great deal of action between the navicular bone and the flexor tendon which passes over it, in order to be inserted into the navicular bone. From concussion or violent motion, the membrane or the cartilage which covers the navicular bone is bruised or abraded, the horse becomes lame, and often continues so for life. This disease admits of remedy to a very considerable extent; no one, however, but a skillful veterinary surgeon is capable of successfully undertaking it.

### Sand-crack

is a division of the crust of the hoof from the upper part of it downward. It bespeaks brittleness of the foot, and often arises from a single false step. If the crack has not penetrated through the horn, it must, nevertheless, be pared fairly out, and generally a coating of pitch should be bound round the foot. If the crack has reached the quick, that *must* be done which ought to be done in every case—a skillful surgeon should be consulted, otherwise false quarter may ensue.

### False Quarter

is a division of *the ligament* by which the crust is secreted. It is one of the varieties of sand-crack, and exceedingly difficult of cure.

### Tread, or Over-reach,

is a clumsy habit of setting one foot upon or bruising the

other. It should immediately and carefully be attended to, or a bad case of *quittor* may ensue. Fomentations in the first instance, and, if much inflammation exists, poultices, to be followed by a mild styptic; tincture of myrrh, or Friar's balsam, will soon effect a cure.

### Quittor

is the formation of little pipes between the crust and the hoof, by means of which the purulent matter secreted from some wound beneath the crust makes its escape. The healing of this and of every species of *prick* or *wound* in the sole or crust, is often exceedingly difficult.

### Corns

are said to exist when the posterior part of the foot between the external crust and the bars is unnaturally contracted and becomes inflamed. Corns are the consequence of continued and unnatural pressure. The cure of corns must be attempted by removing the cause—namely, the pressure.

### Thrush

is the consequence of filth and unnatural pressure on the frog. It is the cause and the effect of contraction, whether it is found in the heels of the fore feet or the hinder ones. It is not difficult of cure when taken in time; but when neglected, it often becomes a very serious matter. Cleanliness, fomentations, dressing the part with tincture of myrrh, and frequent applications of tar, are the best remedies.

### Canker

is the consequence of thrush, or, indeed, of almost every disease of the foot. It is attended by a greater or less separation of horn, which sometimes leaves the whole of the sole bare. This also, like the diseases of the foot generally, is difficult of cure.

Few things are more neglected, and yet of greater importance to the comfort and durability of the horse, than a proper system of

### Shoeing.

It is necessary that the foot should be defended from the wear and tear of the roads; but that very defence too often

entails on the animal a degree of injury and suffering scarcely credible. The shoe is fixed to the foot, and often interferes with and limits the beautiful functions of that organ, and thus causes much unnecessary inflammation and mischief.

The shoe of a healthy foot should offer a perfectly flat surface to the ground. The bearing or weight of the horse will then be diffused over the surface of the shoe, and there will be no injurious accumulation of it on different points. Too often, however, there is a convexity towards the inner edge, which causes an inequality of bearing, which breaks and destroys the crust and pinches the sensible parts. Round the outer edge of the shoe, and extended over two-thirds of it on the lower surface, a groove is sunk, through which pass the nails for the fastening of the shoe. At first they somewhat project, but they are soon worn down to the level of the shoe, which, in the healthy foot, should not vary in thickness from the heel to the toe.

The width of the shoe will depend on that of the foot. The general rule is, that it should protect the sole from injury, and be as wide at the heel as the frog will permit.

The upper surface of the shoe should be differently formed; it should be flat along the upper end, the outer portion supporting the crust, or, in other words, the weight of the horse, and widest at the heel, so as afford expansion of the bars and the heels. The inner portion of the shoe should be beveled off, in order that, in the descent of the sole, that part of the foot may not be bruised. The owner of the horse should occasionally be present when the shoes are removed, and he will be too often surprised to see how far the smith, almost willfully, deviates from the right construction of this apparently simple apparatus. The beveled shoe is a little more troublesome to make and to apply than that which is often used by the village smith; but it will be the owner's fault if his directions are not implicitly obeyed.

Even at the commencement of the operation of shoeing, the eye of the master or the trustworthy groom will be

### Requisite.

The shoe is often torn from the foot in a most violent and cruel way. Scarcely half the clenches are raised, when the smith seizes the shoe with his pincers, and forcibly wrenches it off. The shrinking of the horse will tell how much he suffers, and the fragments of the crust will also afford sufficient proofs of the mischief that has been done, especially



when this angle is pared out; and yet, from some fatality, the smith rarely leaves it where nature placed it, but cuts away every portion of it.

The true function of the frog is easily understood; it gives security to the tread, and permits the expansion of the heels; but the smith, although these cases come before him every day, seems to be quite unaware of the course which he should pursue, and either leaves the frog almost untouched, and then it becomes bruised and injured, or he pares it away, so that it cannot come into contact with the ground, and consequently is not enabled to do its duty.

The owner of the horse will therefore find it his interest occasionally to visit the forge, and, guided by the simple principles which have been stated, he will seldom err in his opinion of what is going forward there. He should impress two principles deeply on his mind: that a great deal more depends on the paring out of the foot than in the construction of the shoe; and that few shoes, except they press upon the sole, or are made shamefully bad, will lame the horse, but that he may be very easily lamed by an ignorant or improper paring out of the foot.

Where the owner of the horse has sufficient influence with the smith, he will find it advisable always to have a few sets of shoes ready made. Much time will be saved, in case of accident, and there will not be, as is too often the case, the cutting, paring, and injuring of the foot, in order to make it fit the shoe. More injury than would be readily believed is done to the foot by contriving to get on it too small a shoe.

### Clips

are often necessary, in order more securely to fasten the shoe. They are little portions of the upper edge of the shoe hammered out, and turned up on the crust, and fitted in a little depression made in the crust. They prevent the shoe from being loosened or torn off, both in rapid action and heavy draught, and are therefore used on all heavy, and on many light horses. They are sometimes placed on the side of the shoe, and at the beginning of the quarters, and on all horses that are accustomed to paw violently with their feet. Necessity alone, however, will justify their use.

### The Calkin

is a prolongation and turning down of the shoe at the heel,

enabling the animal to dig his foot more firmly into the ground, and with more advantage throw his weight into the collar; but it is an abominable and most injudicious practice to place the calkin on one side alone, as is too often done: an unequal direction and distribution of the weight and bearing of the foot is often given, which is necessarily productive of mischief. Few are the cases which will justify the use of calkins on the fore feet, or even on the hind feet, except they are of equal height on each foot; and few things are more injurious to the foot of the horse than wearing the same shoe more than three weeks or a month, let the work be heavy or light. The shoe should never be heavier than the work absolutely requires. This is acknowledged in the shoe of the hunter and the racer, and will tell in the case of every horse after a hard day's work. The calkin is required on the outside of the hind shoes of hunters, to prevent them from slipping at their leaps; but the inside of the shoe must be made of a compensating thickness, to afford an even bearing for the foot.

### The Bar Shoe

is indispensable in most large stables. It is a very simple contrivance, being nothing more than the continuation of the common shoe over the heels. The bearing of the shoe may thus be taken off from every weak and tender part of the foot, and be either thrown on some other point which is better able to bear the pressure, or diffused over the foot. It is useful in some cases of bad corns, which are thus protected from injury; in sand-crack, the pressure may be removed from either or both sides of the fissure; pumiced feet may be raised by this shoe above the possibility of injury; and in thrush and in canker not only is the weight thrown off the diseased part, but any kind of dressing may be easily retained on the sore. It is a shoe, however, that cannot be safely used for any considerable time, or, at least, it requires occasional or even frequent change, on account of its becoming gradually pressed down on the sore part beneath. Bar-shoes are not safe for use when much speed is required, and they are dangerous when frost is on the ground.

### The Tip

is a very different kind of shoe. It reaches but half round the crust. It is used when the horse is at rest; and, the quarters of this shoe being unfettered, the contracted foot is



sometimes enabled to regain its natural open state. It has been tried for road-work, but, as might naturally be expected, it utterly failed when often or long used.

### **The Leather Shoe**

is principally useful when the foot has been injured or inflamed. It, to a considerable degree, breaks the shock, which would otherwise be painfully felt when the foot is put on the ground. It consists of a piece of leather or felt, about an inch in width, which is placed between the crust and the shoe; and this very materially obviates concussion. It must not, however, be long worn, for the nails cannot always be driven securely; there will be too much play upon them, and they will become loosened; also the holes which they accurately filled at first will be enlarged, and the crust will be broken away.

The sole is sometimes entirely covered with leather. This furnishes a temporary defence for the foot, but there is much insecurity of fastening; the tow, or other dressing introduced between the sole and the leather, is not always equably distributed, and frequently the stopping produces a scaly spongy horn, or gravel and dirt will gradually accumulate between the leather and the horn, and the foot will be considerably injured. Gutta percha is substituted with good effect.

One other shoe must be mentioned—

### **The Horse Sandal.**

It consists of a simple apparatus sufficiently light even to be carried in the pocket, but is more frequently attached to the saddle, and which, on the loss of a shoe, can be applied to the foot in the space of a minute, and so securely attached to it that the sportsman may continue the chase to the end of the longest run. The same sandal has been repeatedly worn more than one hundred miles; it may be procured from any respectable harness-maker.

### **Roaring.**

The quality of soundness involves several questions of no mean importance, especially with regard to those maladies which are capable of being transmitted. It is very apparent to those whose practice among horses is extensive, and who are best able to form accurate opinions, that spavins and

curbs are less frequent than they were five-and-twenty years ago. This may fairly be attributed to the fact, that considerable circumspection has been exercised in avoiding such animals for breeding purposes as, possessing peculiar conformations in their hocks, would render their offspring predisposed to those defects. Blindness is certainly less prevalent than formerly. Superior management in the stable has evidently assisted in averting this evil, insufficiently ventilated, dark stables, with an accumulation of dung to generate ammonia, are fortunately out of fashion.

There is an impression that roaring is more frequent; and among race-horses it is not without foundation. As an hereditary complaint it may certainly be traced to several sources—to horses whose progeny have, in many instances, given unequivocal testimony of the infirmity. When the fact is seriously considered, it is surprising that gentlemen of known talent, owners of valuable studs, liberal in every item of expense calculated to promote the success of their young racing stock, should ever breed from sires or dams known to entail this malady on their progeny. A veterinary surgeon of great ability and observation has stated that every stallion, when consigned to the stud, becomes a roarer. It is a startling assertion, and induced me to investigate the fact very minutely. The result does not corroborate the statement to the full extent of the declaration, although I discovered sufficient to lead me to the conviction that it is a very prevalent affliction. I must here, however, introduce a reserving clause, arising from the difficulty which exists of positively deciding upon every case, which I shall enter upon more minutely as I proceed. In contradiction to the assertion of the professional, I must observe that at various times I had two hunters, which were used for stud purposes during the summer; one of them continued in my possession three seasons, the other two; most assuredly they were not either of them roarers. This might have been, and very probably was, prevented by the work they performed during the hunting season, for it is quite certain that very many stallions, especially those which belong to private breeding establishments, and are kept principally for the use of these establishments, do not enjoy that exercise which is absolutely necessary for the maintenance of their health. The country stallion, which travels from fair to fair, and from market to market, is infinitely more favorably treated in this respect, than his more highly-distinguished brother who presides over a private and choice seraglio.

Roaring may be divided into two classes; that which must be pronounced, in opposition to all theory, as decidedly hereditary; and that which is produced in individuals in consequence of catarrhal disorders, strangles, influenza, or any other temporary cause which establishes inflammation, and a consequent thickening in the mucous membrane lining the trachea, or parts adjacent, which are the seats of the disorder. Some persons are skeptical respecting the hereditary transmission of roaring, for which little surprise can be entertained, when the difficulties which enshroud numerous equivocal indications are enumerated. To unravel the mystery, the primary cause must be ascertained; for it would be exceeding the limits of truth and experience to say that because a horse is a roarer himself, he will transmit it to his stock. Certain conformations, or rather malformations, of the limbs—such as the legs, the hocks, and the feet—are often transmitted from the parent to the offspring; from which splints, curbs, spavins, navicular diseases, and other infirmities, have their origin; and these are admitted in the category of hereditary complaints: yet it cannot be accepted as a rule without exception, that all the produce of malformed animals shall inherit the imperfections of their parents. Upon the principle of malformation in the parts immediately or indirectly connected with the organs of respiration, roaring must undoubtedly come within the definition of an hereditary cause. But when a thickening takes place of the mucous membrane lining the parts which are the seat of the disorder, or ossification of the cartilages of the windpipe, in consequence of inflammation, resulting from bronchitis, influenza, colds, or such-like accidental occurrences, providing no malformation of the parts previously existed, roaring cannot with propriety be denominated hereditary. The difficulty in such cases is to determine whether that malformation of parts does exist. To assign to such accidental causes as the latter the aspersions of hereditary transmission, is not consonant with reason.

There are as many degrees or intonations of roaring as there are notes on the gamut; and those notes ascend from piano to forte. This renders it difficult in some slight cases to decide positively whether a horse is a roarer or not; and good judges may be mistaken. The state of the animal very frequently occasions an impediment to an accurate decision: if he be in very plethoric condition, he will not unfrequently give slight indications of roaring; but when he is divested of that superabundance of fat, all the disagreeable

symptoms disappear. The usual test of startling the animal is by no means an infallible criterion, neither is the stethoscope in all cases to be relied upon. There is but one positive mode of determining the question: the animal being in a proper condition, he must be ridden and tried in all his paces. With stallions this proof is not often practicable; and unless they are badly affected, it is often impossible to prove that they are roarers. There is no point upon which the owner of such a horse is so much tenacious as that of an accusation that his favorite is a roarer. Tell the proprietor that his horse's legs are bad, insinuate that he broke down in consequence, he will receive your remark with complacency: tell him that his horse's hocks are bad, and point out to him an incipient spavin, or an unequivocal curb, he will receive your objection with indifference; point out to him a multitude of unsymmetrical proportions, he will listen to you with calmness; but only intimate to him that you think his horse is a roarer, and he will roar in your ear a challenge of defiance in proof of your allusion.

Large horses certainly have a greater tendency to become roarers than smaller ones, and irritable-tempered ones more frequently than those of a phlegmatic disposition. Several of the largest stallions might be enumerated as being predisposed to entail this malady on their issue. These are certainly valid reasons for not giving a preference to horses of large size, although public opinion predominates in their favor. Stallions are more subject to the complaint than geldings, and geldings more so than mares. Compactly-formed horses of moderate size seldom indulge their owners with music. It is very difficult to assign any reason for this; but it appears that there is a greater constitutional disposition in stallions to inflammation about the respiratory organs than there is in mares or geldings, and that inflammation, resulting in deposits of lymph and ossification of the cartilages, produces the disorder. This phenomenon may be explained in consequence of the sympathy which is well known to exist between various parts of the body.

A change in the atmosphere is a very frequent cause of inflammation in the respiratory organs, and severe frosts are very likely to produce it. In order to preserve the blooming condition of our horses' coats, it is a common practice with grooms to keep the stables as warm as possible when a frost sets in; but it is a most dangerous observance. Of the importance of keeping horses warm in their bodies, there cannot be a question; but that is better regulated by extra

clothing. If the atmosphere of the stable be raised to a temperature greatly exceeding that of the open air, the horses, when taken out to exercise or work, are liable to serious consequences, from the great increase in the amount of oxygen which rushes through the respiratory organs in the act of inspiration. The quantity of oxygen is regulated by the temperature of the atmosphere; and there are few persons who have not experienced the inconvenience attendant upon passing from an over-heated ball-room into the open air; and they generally take the precaution of adopting additional clothing. The case of the horse is precisely analogous.

Although a very liberal premium has been offered, the cure for roaring has not yet been discovered. When it proceeds from malformation, it is impossible: or if the cartilages of the windpipe became ossified, no remedy can be found to reach those parts. An extensive deposit of lymph having taken place in the mucous membranes with which the respiratory organs are defended, comes within the same category. A strong stimulus applied to the sinews, joints, or muscles, in the event of lameness, may, and frequently does, impart a wonderful effect; but it is a different affair when internal organs, such as those of respiration, are disordered; those parts cannot be brought into immediate contact with any application. When a horse is affected with inflammation about those parts which are the seat of the disorder, if it be vigorously attacked in its incipient state with the usual stimulating preparations, providing there is no malformation to contend against, the malady may in very many cases be prevented; and a vast number of cases of confirmed roaring are to be attributed to neglect or delay at the important crisis of commencement. Those who would avoid breeding roarsers must avoid breeding from parents whose progeny has evinced a predisposition to the complaint. So far every breeder has the remedy in his own hand; but with the utmost caution, all living creatures are subject to disorders; and if the results are unfortunate, in defiance of the most skillful treatment, breeders must console themselves with the reflection that their disappointments are the decrees of fate.

## NOTE.

A judicious selection of the most eligible parents for the purpose of breeding, combined with careful attention to the method of rearing and treatment of the offspring, will not

fail to afford ample remuneration to those who embark in the speculation; and the country will abound with animals of the most useful classes, possessing sound and enduring constitutions. In order to render the arguments contained in this little volume impressive, it has been necessary to trace the progress of racing and breeding horses, and to show that the higher classes of horses have been gradually improving.

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## THE TROTTING HORSE.

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IN the preceding pages we have treated at length, and with careful consideration, the subject of Horses in general.

Now we propose to devote some pages to a description of the Trotting Horse, and especially the American Trotter.

It is now admitted by even the most prejudiced of English writers on the subject, that the Trotting Horse, as he appears now in our country, far surpasses in all essential qualities, similar animals in any other country in the world.

For various reasons not necessary here to dilate upon, horseback riding has never been anything like an universal passion with North Americans. True, in some States, owing to the irregular formation of the face of the country, and a scarcity of good roads, it became a necessity to use saddle horses. The wealthier classes in Virginia, and some of the Southwestern States, also, to a certain extent, kept up the hunting customs of their ancestors in the mother country.

Still, a general preference has always been given to driving in place of riding, wherever the country was comparatively level, and the roads tolerably smooth.

Another reason for the popularity of *driving* in lieu of *riding* lay in the fact that the majority of persons able to keep a horse for both use and pleasure were not born "with a silver spoon in their mouth," and have had little opportunity to learn the art of equitation in their youthful days. Such persons, as they became possessed of the means to indulge in harmless and healthful recreations, found exactly the agreeable style of locomotion that suited them, seated in a pretty light wagon, behind a trotter or pacer going at a speed but little less than that of a running horse.

Just about the time that the fast and enduring trotter was needed, many circumstances combined to produce the desired animal.

This breed of horses—the American trotter—is now al-

most as clearly defined and as distinct as the Arabian, or the thoroughbred racer,

Thanks to the fact that we possess in this country a class of farmers of wonderful intelligence, enterprise and public spirit; men who have sense enough to seize upon a good idea when they see it, and enterprise sufficient to put money and time in any project offering reasonable hopes of being remunerative—if not to themselves directly, at least to their fellow citizens.

While in thoroughbreds, such men as Sandford, Ten Broeck, and Lorillard, have borne the colors of America "full high advanced," and made it patent to the whole world that the United States breeders can bear away cups and purses from the swiftest "flyers" of Great Britain, even on their "native heath," our trotting-stock raisers have produced so perfect a breed of horses that it is only prevented from beating the same style of horses in Britain, from the fact that outside of America there are no competitors worth contesting with.

Again, of late years there have been quite a number of persons, possessed of princely incomes, who have had a passionate liking for speedy trotters, and who have paid such large sums for choice horses that it has proved a powerful incentive to the breeding and training of better and better still.

But although our trotters far excel those of every other country, it must not be supposed that we have a monopoly of trotters. Russia has some very fine animals of this class. While in Great Britain, trotting matches took place quite often just before the beginning of the present century. A mare, unnamed, had trotted in 1791 sixteen miles in 58m. This, in common with most British matches, was for long distances. Many long-distance goers came of a stock known as Norfolk trotters—but they never reached anything like the speed of our modern trotters. The first public race for a stake in this country was in 1818, for \$1000. On this occasion Boston Blue trotted a mile in three minutes. This was thought so wonderful that he was taken to England where he won over \$500 in one race, doing twenty-eight miles in one hour twenty-eight minutes and fifty seconds. He was a winner against time in several matches. About three minutes was his average time. His pedigree was unknown. His color was gray, and he was sixteen hands high.

Messenger's colts began to excite attention in 1821. They showed power and swiftness,



The first public trotting course on Long Island was opened in 1825.

Some three years after, the Hunting Park Association was organized in Philadelphia.

For many years after this, two minutes forty seconds was thought to be "rushing time."

Messenger has had such a permanent effect upon our trotting stock, that more or less of his blood is to be found in the veins of all our most famous trotters. We here give a brief history of that noble stallion, and other famous horses, taken from that excellent work, "Every Horse Owner's Cyclopedia," published by Porter & Coates, Philadelphia.

Messenger was an English thoroughbred, foaled in 1780, and imported, as were many other English thoroughbreds, on account of his value as a running horse, and for the improvement of thoroughbreds in this country. He had run successfully in several races, and, at five years old, won the King's Plate. It was three years after this performance, 1788, that he was imported into New York by Mr. Benger. The first two seasons after his arrival he was kept at Neshaminy Bridge, near Bristol, in Bucks County, Pa. Mr. Henry Astor then purchased him, and kept him on Long Island for two years. About this time Mr. C. W. Van Ranst purchased an interest in him, and for the remainder of his life he was kept in various parts of the State of New York, with the exception of one year at Cooper's Point, in New Jersey, opposite Philadelphia. He died January 28, 1808.

Messenger was a gray, 15 hands 3 inches high, and stoutly built. His form was not strictly in conformity with the popular notions of perfection, being upright in the shoulders and low on the withers, with a short, straight neck and a large, bony head. His loins and hind-quarters were powerfully muscular, his windpipe and nostrils of unusual size, his hocks and knees very large, and below them limbs of medium size, but flat and clean; and, whether at rest or in motion, his position and carriage always perfect and striking. It is said that during the voyage to this country the three other horses that accompanied him became so reduced in flesh and strength that when the vessel landed at New York they had to be helped and supported down the gang-plank; but when it came to Messenger's turn to land, he, with a loud neigh, charged down the gang-plank, with a colored groom on each side holding him back, and dashed off up the street at a stiff trot, carrying the grooms along in spite of their efforts to stop him.

Though his name has been made illustrious chiefly by the performances of his trotting descendants, he was also the sire of some of the best running horses of his day. The most famous on the turf of his immediate thoroughbred descendants were Potomac, Fair Rachel, Miller's Damsel (dam of American Eclipse), Bright Phoebus, Hambletonian, Sir Solomon, and Sir Harry. The celebrated four-mile racer, Ariel, had Messenger in her pedigree four times in five generations.

In his day trotting was not much in fashion, as we have shown, and nothing is known of the trotting speed of this great fountain-head of trotters, nor were any of his sons or daughters ever trained to that gait. It was the second generation of his descendants, the grand-colts of Messenger, and mostly those produced by a cross with the common stock of the country, that attracted attention by their trotting speed. This fact is easily explained. The thoroughbreds of his get were trained to running, and were not used as road horses, or some of them would probably have surpassed any of his half-bred descendants in trotting. But even his own half-bred colts made no mark as trotters, though some of them became celebrated as the sires of trotters. This is somewhat remarkable; but we should bear in mind that public attention had not then been given to that gait, good roads and light vehicles were not so common, and the next generation being more numerous, the probabilities were greater that this remarkable quality of the family should not remain undiscovered.

The sons of Messenger to which nearly all the fast trotters of the present day trace their pedigree were Plato, Engineer, Commander, Why-Not, Mount Holly, Mambrino, and Hambletonian.

Mambrino, named after the sire of Messenger, was thoroughbred, a bright bay, 16 hands high, long bodied, and, like his sire, upright in the shoulders. He was not only a large but also a coarse horse, badly string-halted. He had a free, rapid, swinging walk, a slashing trot, and running speed of the first order. He was the sire of Betsy Baker, one of the first eminent American trotters, of Abdallah, from whom are descended many of the fastest, including the get of Rysdyk's Hambletonian, who was sired by Abdallah, and of Mambrino Paymaster, from whom are descended Mambrino Chief and all his get, including Lady Thorn, Mambrino Pilot, Bay Chief, &c.

Next in celebrity is Hambletonian, also thoroughbred.

He was a dark bay, 15 hands 1 inch, beautifully molded, and without a single weak point. He was the sire of Topgallant, Whalebone, Sir Peter, Trouble, and Shakspeare; all ranked among the best of the early American trotters.

Abdallah was a grandson of Messenger, and deserves especial mention in this connection because so many trotters of celebrity are descended through him. He was foaled in 1826, the property of Mr. John Treadwell, of Jamaica, L. I. His sire was Mambrino, and his dam a daughter of Messenger, called Amazonia. Thus Abdallah was closely inbred. He was a bay, and inherited much of the plainness of his sire; but also inherited the trotting quality of Messenger in great degree. He was trained at four years old, and was considered the fastest young horse of his day. In the spring of 1840 he was sold to Mr. John W. Hunt, of Lexington, Ky.; but, on account of the great value of his stock, he was bought back the next year, at a high price, and died in 1852. Beside being a progenitor, through his son, Rysdyk's Hambletonian, of that numerous and highly-distinguished family of trotters of which Dexter, George Wilkes, and Mountain Boy are the most eminent representatives, he is equally remarkable for the number of mares of his get from whom very fast trotters have been bred. To say that a horse is "out of an Abdallah mare," is pedigree enough on that side with most horsemen.

Of the other sons of Messenger it is not necessary to speak at length, though we find many horses of the present day descended from them, and inheriting the Messenger characteristics. When the pedigree of any fast trotter can be traced far enough, it rarely happens that Messenger is not found in it. Many horses that show good trotting speed, and are considered by their breeders and owners to be nothing but common stock, are found to be descended from Messenger, when intelligent investigation reveals their pedigrees.

Another imported horse that added something to the trotting quality of our stock was Bellfounder, a stallion foaled about 1817, and brought from England to Boston in 1823, by Mr. James Boot. Many distinguished trotters are in part descended from some of the many thoroughbreds that have been imported from England at various times, and, indeed, our most celebrated horses have a strong infusion of that blood, derived from other sources than Messenger. Conceding the value of good thoroughbred crosses in giving spirit and endurance to trotting horses, and admitting that Diomed, Whip, Trustee, Glencoe, Margrave, and other imported

thoroughbreds have eminent trotters among their descendants, it may be safe to say that all of them together would not have produced a family of trotters without a cross from Messenger; and equally safe to assert that the fame of Messenger would have been no less if any one of the others had never been foaled. The imported Arabian, Grand Bashaw, had the luck to have his name perpetuated in a family of good trotters that originated in Buck's County, Pa., but the trotting quality all came from Messenger, who stood in that country two years. The first of the Bashaws that manifested any trotting quality was Young Bashaw, a son of the Arabian; and he was the only one of the whole get that was thus endowed. The explanation is found in the fact that Young Bashaw's dam was a granddaughter of Messenger.

Of American horses not descended from Messenger that have contributed to establish the reputation of our trotters, the number is not large nor the influence very considerable. Sir Henry, the famous competitor of American Eclipse, and Duroc, both thoroughbreds, and both descended from imported Diomed, seem to have transmitted some trotting quality to their descendants, but it is very doubtful that either, or both, would have established a family of trotters. Seeley's American Star, quite famous as the sire of modern trotters, combines the blood of both, being sired by American Star, a son of Duroc, and out of Sally Slouch by Sir Henry, but his grand-dam was by Messenger. American Eclipse, the progenitor of many good trotters, had also the blood of Duroc, his sire; but as his dam, Miller's Damsel, was by Messenger, the Duroc part of the pedigree is seldom thought of. Americus, who beat Lady Suffolk on the Hunting Park Course in a five-mile match to wagons in the remarkable time of 13m. 54s. and 13m. 58 1-2s., was by Red Jacket, a son of Duroc, and not known to have inherited his trotting from any other source.

Canada has added something to our trotting stock. In trotting they are usually short, quick steppers with very high knee action, and are spirited, trappy harness horses, and long-lived. These horses are often said to be degenerated from their Norman ancestry through the coldness of the climate, the long winters and scanty fare. There have been numerous importations from France to this country of the choicest specimens of Norman horses, and an impartial comparison shows that the Canadian has gained in spirit and speed more than enough to compensate for all he has lost in size.

The best of the Canadians that ever came to the States was, probably, Pilot, a black pacing and trotting horse whose descendants inherited trotting speed. He was often distinguished as Old Pacer Pilot. Wallace's American Stud Book says of him: "Foaled about 1826. Nothing is known of his pedigree. He was called a Canadian horse, and both trotted and paced; at the latter gait, it is said, he went in 2m. 26s. with 165 pounds on his back. He was bought about 1832 by Major O. Dubois, from a Yankee peddler in New Orleans for \$1000. He was afterwards sold to D. Heinsohn, of Louisville, Ky., and was kept in that vicinity until he died about 1855. His stock were very stout and fast." As nothing is known of his pedigree, and as he was in all appearance a genuine Cannuck, it is likely that he did not owe anything to Messenger. One of his get, Alexander's Pilot, Jr., out of Nancy Pope by Havoc, was the sire of many fast trotters, the fastest of which was John Morgan, out of a mare by Medoc and he by American Eclipse. The dam of Mambrino Pilot was also by Pilot, Jr., and, like John Morgan, was of Messenger descent on the dam's side. Though the best of the descendants of Old Pilot are part Messenger, there is none of that blood in Pilot, Jr., and it must be confessed that Old Pilot sired some very good horses that took the trotting all from himself.

Another horse of Canadian origin, though not a Cannuck, deserves notice in this connection. Royal George, called Warrior before he came to the States, the sire of the fast stallion Toronto Chief, and several other good trotters, was a native of Canada and probably out of a Cannuck mare, but his sire was Black Warrior, and he by an imported English horse.

Some very good colts have been bred out of Cannucks by good trotting stallions. Thus the celebrated sons of Rysdyk's Hambletonian, Bruno and the Brother of Bruno, and their full sister Brunette, are out of a Canadian mare. At three years old Bruno made the astonishing time of 2m. 39s. in harness. At four years old, 2m. 30s. and 2m. 34s. At six years old he trotted to the pole with Brunette, seven years old, on the Fashion course in 2m. 35 1-4.

Gift, a chestnut gelding by Mambrino Pilot, was out of a small pacing Cannuck. At four years old he received five forfeits and challenged through the *Spirit of the Times* any colt of the same age to trot in harness or to wagon for \$1000, without being accepted. Though these colts are out of Canadian mares, it must be considered that the mares themselves were

not very fast, and that Rysdyk's Hambletonian and Mambino Pilot are the best two trotting foal-getters in the world. The bay stallions St. Lawrence, the sire of several fast trotters, was a Canadian, and one of the best of his breed. He died at Kalamazoo in 1858. There is one other horse deserving especial notice as a progenitor of trotters, in whose veins no blood of Messenger can be found, though his pedigree is too obscure to warrant the assertion that none existed there. Black Hawk, often called Vermont Black Hawk to distinguish him from the equally celebrated Long Island Black Hawk, and also called Hill's Black Hawk, was of Morgan stock on his sire's side; being a son of Sherman, one of the best sons of Justin Morgan, the founder of the Morgan family. The dam of Black Hawk was raised in New Brunswick, and nothing is known of her pedigree. Black Hawk was foaled in 1833 at Greenland, N. H. At four years old he was sold to Lowell, Mass., where he was used as a carriage horse for seven years. He then became the property of David Hill, of Bridport, Vt., where he acquired great fame; begetting more high-priced colts than any other horse of his day. He had remarkable power in propagating his own characteristics, and his stock were uniformly stylish, spirited harness-horses, many of them fast, and some of them among the fastest. Another history of his pedigree makes him the son of a Canadian named Paddy; and still another declares him a veritable native of Canada; though not a pure Cannuck.

Black Hawk's colts were never gray, as many of them would have been if his dam was that color, but many of them were chestnuts with white feet and faces, which was the color of Sherman and of Sherman's dam. This fact pretty clearly shows that neither the "Paddy" story nor the Canadian pedigree are correct, but that Black Hawk was truly a Morgan. He was a little under 15 hands, and weighed about 1000lbs. In 1842 he won \$1000 by trotting five miles over the Cambridge Park Course in 16m. In 1843 he won a race of two-mile heats with ease in 5m. 43s. and 5m. 48s., and several times trotted single miles in 2m. 42s. He was the sire of Ethan Allen, Black Ralph, Lancet, Belle of Saratoga, Black Hawk Maid, Flying Cloud, and many others of good repute for speed. His colts were in great demand, particularly in the West and South, where hundreds were sold at very high prices. As many of his sons were, and still are, kept as stallions, his descendants are very numerous; and he undoubtedly has done much to improve the stock of American horses.

Pacing is not considered a good harness gait, but some

of our fastest road and sporting horses have been pacers, and they are frequently matched with trotters in races. Many horses both trot and pace, and of those that have both gaits, some go faster in one and some in the other. To teach a trotter to pace is somewhat difficult unless the horse naturally inclines to it, but it may be done sometimes by riding with a severe curb-bit and spurs. Of course it requires good horsemanship, as well as means and appliances, to urge the movement desired, and to restrain the animal from the steps he is most accustomed to take. When the saddle was more in use than now, pacing was a favorite gait with many riders, but unless the horse can occasionally change his way of going into a canter, it becomes very tiresome on a long journey. Though the rider may not be jolted from the saddle so much as by a trotter, the wabbling twists his back first one way and then the other most fatiguingly.

To teach a pacer to trot, various expedients are resorted to. Fence-rails are put down about as far apart as a trotter steps in a jog. The pacer is ridden over them and finds it difficult to lift his feet over them in that gait, and adopts the trot. When a horse has become very tired by long pacing he will sometimes ease his weary muscles by a change of action into a trot; and this he is more likely to do if the roads are muddy. From such a beginning a skillful driver may make the trotting permanent.

Some very good and fast trotters were first pacers and were taught the better way of going, and some of them after they had acquired speed in their natural gait.

Pelham was first a very fast pacer, and afterward became a distinguished trotter. In 1849 he was the first to win a heat in harness in 2m. 28s. Cayuga Chief was a pacer in a livery stable, in Worcester, Mass., and a favorite ladies' hackney. One day he struck a trot, and soon became distinguished. In 1844 he trotted to a wagon with 220lbs. in 2m. 36 1-2s. The black gelding Pilot, probably a son of the old pacer of the same name, was first a fast pacer. He surprised his owner by striking a trot, and improved so rapidly that in a short time he trotted in 2m. 28 1-2s. Tip, and Dart, and Sontag were all pacers that afterward trotted fast. Old Pacer Pilot went fast in both gaits, and so did his grandson, Tom Wonder, the sire of the famous twenty-mile trotter, John Stewart.

Though there are objections to pacing as a road gait, in harness, some of the fastest have been pacers; and though it is generally believed that a pacer soon tires, there are per-

formances on record that prove them capable of keeping in the best of trotting company for any distance. In 1843, Sir Walter Scott paced on Beacon Course eighteen miles in less than an hour without a break or halt. In the same year, Oneida Chief paced against the best trotters of that time—Lady Suffolk, Confidence and Dutchman—and won more races than he lost, making 2m. 28 1-2s., the best time then on record. In the following year, Tippecanoe paced at New Orleans in 2m. 36s., carrying a very heavy rider; and Unknown paced on Beacon Course in 2m. 23s., a performance that had never then been equalled by trotter or pacer. Old Pacer Pilot paced in 2m. 26s. with 165lbs. on his back. In 1850, Roanoke paced under saddle in 2m. 21 1-2s. He was a roan gelding, and nothing is known of his pedigree. In 1854 Pocahontas paced three heats in a race at New Orleans in 2:20, 2:25, and 2:20. But in the next year she brought the figures down to something less than has ever been equalled by any trotter but Dexter, and not surpassed by him. In a race with Hero, the pacer, in a wagon that weighed with the driver 265lbs. Pocahontas paced the first mile in 2:17. This was never beaten but once, and not until 1868, when Billy Boyce paced at Buffalo faster than any other horse had ever trotted or paced. In a race with Rolla Goldust, a trotter, mile heats, 3 in 5, to saddle, Boyce paced the second mile in 2:15 1-4, and the third in 2:14 1-4, pacing the last half of the second mile in 1:5 1-4, and the first half of the third mile in 1:6.

Many pacers belong to trotting families, and some trotter's seem to make their speed from a pacing ancestor, though this is not common. Oneida Chief was half-brother of Flora Temple's sire. Woodpecker, the trotter, and James K. Polk, the pacer, both took their speed from the same dam. Hero, the pacer, and competitor of Pocahontas in her wonderful performance, was begotten by Harris's Hambletonian, the sire of the trotters True John, Green Mountain Maid, John Anderson, and Sontag, a mare that was at first a natural pacer and afterward trotted very fast. Saltram, the sire of Highland Maid, was a pacer, and his dam, Roxana, was also a pacer. Highland Maid paced naturally, but was taught to trot, and went very fast. At six years old she trotted against Flora Temple, and lost the race by getting tired, being young, and going into a pace, which was her natural and easiest gait. She won the first heat in 2:29, the second in 2:27, but was distanced in the third. Highland Lass, a daughter of Highland Maid, was a fast trotter, and died in 1865. Her daugh-



ter, Highland Ash, by Ashland, is also a trotter, and in 1868 won the *Spirit of the Times* Stake for three-year olds, over four thousand dollars, in 2:48. Flatbush Maid, one of Mr. Robt. Bonner's pair that trotted to a road wagon in 2:26, was begotten by a Chestnut pacing horse that also trotted, Pocahontas is nearly thoroughbred, and was begotten by Cadmus, a son of American Eclipse. She, therefore, takes her wonderful pacing speed from Messenger, the sire of Miller's Damsel, who was the dam of American Eclipse. Her daughter Pocahontas, Jr., by Ethan Allen, is a trotter, and very fast.

Billy Boyce, a bay gelding, and very bloodlike in his appearance, is by Corbeau, a horse owned near Harodsburg, Ky., and the sire of several trotters. Corbeau was by a Canadian, not known as a begetter of trotters; but his dam was by Frank, a thoroughbred, by Sir Charles, his grandam by Sir Archy; which gives Corbeau two lines of descent from imported Diomed, and probably gives him also his trotting quality.

Boyce has a cross of the Messenger, through American Eclipse, the sire of his granddam, and this gives him another cross of Diomed, through Duroc, the sire of American Eclipse. He is, therefore, of kindred blood with Lady Thorn, Dexter, Mambrino Pilot, Kemble Jackson, Independent, John Morgan, Peerless, and others of celebrity; that is they all combine in their pedigrees the blood of Messenger and Diomed.

These facts, a few of the many that could be cited, show the close relationship between pacers and trotters. They derive their speed from the same sources; trotters beget pacers, and pacers beget trotters; many go fast in one gait, and, after being taught the other, go equally fast in that; so that they may properly enough be classed together, and designated by the common title of American Trotters.

Though trotters are derived from so few sources as to be nearly all related to all the others, there are certain families that claim especial notice.

The Abdallahs are an older family, and not less distinguished.

The Vermont Black Hawks were once very popular, and for a few years their fame quite eclipsed all other families.

The Bashaws are a very excellent family of trotters but nearly obliterated now by admixture with others. They are a branch of the Messenger family that took their name from an imported Arabian, but not the trotting quality. The first

of the family was Young Bashaw, a son of the Arabian; and his best colt was Andrew Jackson, the first stallion that ever trotted in a public match. From him are descended many sub-families—the Clays, the Patchens, &c. In a published pedigree of Green's Bashaw, may be seen the pedigree of Andrew Jackson, and why he was the best son of Young Bashaw. Charlotte Temple, a very fast mare that was taken to France, her full brother, the stallion Saladin, and Black Bashaw, another stallion, were all begotten by Young Bashaw, and the two last named were both progenitors of many good trotters. Comet, Whisky, Lantern, Belle of Baltimore, and Lightning, were all by Black Bashaw. One of Andrew Jackson's best colts was the stallion Long Island Black Hawk, often confounded with Vermont Black Hawk, the Morgan Horse. They should be carefully distinguished. Long Island Black Hawk had Messenger blood by four lines of descent, and his descendants inherit the trotting in large degree. Vermont Black Hawk begot many good horses, but the speed seems to run out in a few generations. He had no Messenger in him.

George M. Patchen was descended from Long Island Black Hawk through Henry Clay and Cassius M. Clay, with a cross of Imported Diomed and another of Imported Trustee. Patchen's descendants have not met the expectations of breeders. They are coarse in form, and subject to curbs and ring-bones. Lucy, the best of his get, was out of a May Day mare, and thus got another cross of the Diomed from Sir Henry, the sire of May Day.

Long Island Black Hawk's best son as a stock horse was Henry Clay, out of Surry, a mare of great speed from Canada. Henry Clay begot trotters, and died in 1867, aged 30 years. His son, Cassius M. Clay, out of a fast mare of unknown pedigree, was the sire of Patchen, and the ancestor of a numerous progeny of trotters. He may be considered the founder of a family of Clays, including C. M. Clay, Jr., Harry Clay (believed by many to be the sire of Dexter), Amos's C. M. Clay, the sire of American Girl, that trotted in 2m. 40s. at 4 years old, and 2m. 32 1-2s. at 5 years old; Clay Pilot, Kentucky Clay, Cora, Nonpareil, and others.

A very good and handsome family are the Morrills, a branch of the Morgans; Morrill being a descendant of Justin Morgan, with two crosses of Diomed and four of Messenger to account for the trotting. His best colt was Young Morrill, owned by Samuel Perkins, Cambridge, Mass., now about 20 years old, and sire of Draco, Fearnought, Danville

Boy, Mountain Maid, Hiram Woodruff, and many others that are among the best of road horses. He is more of a Morgan than his sire, having two lines of descent from Justin Morgan on his dam's side.

The Morgans are not distinguished as fast trotters, though many of them, like the Canadians, from whom they are in part descended, are good and smart road horses; and when crossed with Messenger, as Ethan Allen, Flying Cloud, Morrill, Lone Star, &c., they are among the best.

Another family of very excellent reputation are the American Stars. The founder of the family was foaled in 1837, and died in 1861, the property of Jonas Seely, Orange County N. Y. He had some Messenger blood, but more of Diomed through Duroc in one line and Sir Henry in another. The dam Dexter was by American Star, as were a good many fast trotters, the best of which is Peerless, a gray mare, foaled in 1853, and owned by Robert Bonner, of New York. Hiram Woodruff said she was the fastest animal that he or any other man ever drove to a wagon, and that he drove her a quarter in 30s. and a mile in 2m. 23 1-4s. Her dam was full of Messenger blood. American Star, was a rat-tailed horse, and some of his colts are rather deficient in hair on their tails; but they are fast and very gamey.

Green's Bashaw, foaled in 1855, and owned in Muscatine, Iowa, has some superior colts, among them Kirkwood and Bashaw, Jr., both fast; and this, together with his remarkable pedigree, justifies the expectation that he will become the head of a distinguished family. On his sire's side he has the Messenger blood through four channels, and on his dam's side the same pedigree as Rysdyk's Hambletonian with an additional cross of Webster's Tom Thumb, a fast horse that looked like a Canadian and begot trotters.

Golddust, a chestnut, foaled about 1855, and owned by L. L. Dorsey, Lexington, Ky., has begotten quite a numerous family of trotters considering his age. He is a very blood-like horse, a fast walker and a fast trotter. He takes his speed from his sire, Vermont Morgan, whose dam was by Cock-of-the-Rock, he by Duroc, a son of Diomed. Cock-of-the-Rock's dam was Romp, a full sister to Miller's Damsel, by Messenger. On his dam's side he has some Arabian and thoroughbred blood that shows in the style and form of his colts.

The Pilots, another Kentucky family, are descended from the Old Pacer Pilot, and are best represented by one of his sons, Alexander's Pilot, Jr., and his descendants. Pilot, Jr.,

owned by R. A. Alexander, Lexington, Ky., is a black, and was foaled about 1845. His dam was Nancy Pope, by Havoc, a grandson of Diomed, and thus he takes the trotting from both sides, and in excellent combination. He is the sire of John Morgan, Jim Rockey, Tackey, Pilot Temple, Dixie, Tattler, and many more. John Morgan was the closest competitor of Flora Temple in her best days, and every way one of the best trotters in the country. His dam was by Medoc, a son of American Eclipse, and he thus had another cross of Diomed, and one of Messenger. Tackey has trotted in 2m. 28s.; Pilot Temple, out of the dam of Flora Temple, trotted in 1868 in 2m. 31s.; Jim Rockey trotted in 1859 in 2m. 32s.; and Tattler, 5 years old, trotted in 1868 in 2m. 26s., a performance that probably has never been equalled by any horse of the same age. The famous twenty-miler, John Stewart, is a descendant of Old Pilot, through Tom Wonder and Tom Crowder—the last, a son of the old pacer.

A modern family, is composed of the descendants of Mambrino Chief—a horse that was bred in the East, and taken to Kentucky by James B. Clay in 1854, where he died in 1861. His sire was Mambrino Paymaster, by Mambrino, the best son of Messenger in the trotting line. His fast progeny is very numerous and very famous, and includes Lady Thorn, Bay Chief, Mambrino Pilot, Ericsson, Mambrino Patchen, Brignoli, Kentucky Chief, Ashland, &c.

Lady Thorn stands first among all trotters now in public, and second only to Dexter and Flora Temple. Her pedigree and her performances are in perfect accord; the speed and bottom both represented by three lines of descent from Messenger, and three from Diomed; herself almost thoroughbred.

Bay Chief, unfortunately shot by guerrillas, trotted half a mile when 4 years old in 1m. 8s., a performance rarely equalled at any age. Ericsson trotted at 4 years old in 2m. 30 1-2s., to a wagon, and is now at the head of the large breeding stud of K. C. Barker, Detroit, Mich. Brignoli, at 5 years old trotted two-mile heats in harness in 5m. 20 1-2s., 5m. 18 1-2s., and 5m. 17 1-2s. Mambrino Patchen is a full brother of Lady Thorn, and wretchedly misnamed, being related to Patchen only in a remote degree, though both inheriting largely the Messenger blood.

The most distinguished son of Mambrino Chief, is Mambrino Pilot, owned by C. P. Relf, of Norristown, Pa.; and, though foaled so lately as 1859, is already distinguished as a sire of trotters. He is a brown of large size and pony built,

faultless in form and action, with an air of majesty in every attitude. At 6 years old, with very short preparation, he trotted against time in 2m. 27s. He inherits the blood of Messenger through three channels, and of Diomed through two, with a cross of Old Pilot, through his best son, Pilot, Jr.

Considering that his oldest colts are but 5 years old, and that when those now old enough to show speed were begotten, he had not made his reputation, and did not receive the best of trotting mares, the number and speed of his fast colts is truly astonishing.

Gift, ch. g., received five forfeits at 4 years old, and challenged through the *Spirit of the Times* any colt of the same age, to trot in harness for \$1000 a side, without being accepted. Bellringer, b. s., trotted in 2m. 40s., before he was 4 years old. Gift and Bellringer both belong to Mr. Relf. Cranston, owned by Amasa Sprague, R. I., at three years old, trotted the second mile in a two-mile heat in 2m. 40 1-2s. Vosburgh, ch. s., the property of A. & T. H. Carpenter, of Lyons, Iowa, when just 3 years old, trotted several times in 2m. 40s., and challenged any other horse in the world of the same age, to trot for any amount, at 4 years old, in September 1869. Charles S. Dole, of Chicago, Ill., has a chestnut mare in his breeding stud, by Mambrino Pilot, that in the management of Dr. Kerr, of Lexington, Ky., trotted in 3m. at 2 years old. Eschol, Detective, Etta, Agitator, and Mambrino Messenger are other fast colts of the same family.

#### VICES AND DISAGREEABLE OR DANGEROUS HABITS OF THE HORSE.

The horse has many defects, occasionally amounting to vices. Some of them may be attributed to natural temper, for the human being scarcely discovers more peculiarities of habit and disposition than does the horse. The majority of them, however, as perhaps in the human being, are the consequences of a faulty education.

#### RESTIVENESS.

Of all the vices of the horse restiveness is the most annoying and dangerous. It is the produce of bad temper and worse education; and, like all other habits founded on nature and stamped by education, it is inveterate. Whether it appears in the form of kicking, or rearing, or plunging, or bolting, or in any way that threatens danger to the rider or the horse, it rarely admits of cure.

## BACKING OR GIBBING.

One of the kinds of restiveness is backing or gibbing. Some horses have the habit of backing at first starting. A moderate application of the whip will usually be effectual. Others, after starting, exhibit obstinacy and viciousness, frequently the effect of bad breaking. A hasty and passionate breaker will often make a really good-tempered young horse an inveterate gibber. Every young horse is at first shy of the collar. If he is too quickly forced to throw his weight into it, he will possibly take a dislike to it, that will show itself in the form of gibbing as long as he lives. Resort to no severity, even if the colt should go out several times without even touching collar. The example of his companion will ultimately induce him to take to it voluntarily and effectually. A large and heavy stone should be put behind the wheel before starting, when the horse finding it more difficult to back than to go forward, will gradually forget this unpleasant trick. It will likewise be of advantage so to start that the horse shall have to back up hill. This will soon make him go forward. A little coaxing, or leading, or moderate flagellation, will assist in accomplishing the cure. When, however, a horse has been improperly checked or corrected, swerves and gibs, and backs, it is a more serious matter. Persuasion should first be tried; and, then coercion, but no cruelty. The horse may, perhaps, be whipped into motion, but if he has once begun to gib, the habit will be so rapidly and completely formed, that he will become insensible to all severity.

It is useless and dangerous to contend with a horse determined to back, unless there is plenty of room, and, by tight reining, the driver can make him back in the precise direction he wishes, and especially up-hill. Such a horse should be immediately sold, or turned over to some other work. As a wheeler, or, in the middle of a team at agricultural work, he may be serviceable. The reformation will last while he is thus employed, but, like restiveness generally, it will be delusive when the horse returns to his former occupation. The disposition to annoy will very soon follow the power to do it. When a horse, not often accustomed to gib, betrays a reluctance to work, or a determination not to work, common sense and humanity will demand that some consideration should be taken before measures of severity are resorted to. The horse may be taxed beyond his power. He soon discovers whether this is the case, and by refusing to proceed,

tells his driver that it is so. Sometimes the withers are wrung, and the shoulders sadly galled, and the pain, which is intense on level ground and with fair draught, becomes insupportable when he tugs up a steep acclivity. These things should be examined into, and, if possible, rectified; for, under such circumstances, cruelty may produce obstinacy and vice. They who are accustomed to horses know what seemingly trivial circumstances occasionally produce this vice. A horse whose shoulders are raw, or have frequently been so, will not start with a cold collar. When the collar has acquired the warmth of the parts on which it presses, the animal will go without reluctance. Some determined gibbers have been reformed by constantly wearing a false collar, or strip of cloth round the shoulders, so that the coldness of the usual collar should never be felt; and others have been cured of gibbing by keeping the collar on night and day, for the animal is not able to lie down completely at full length, which the tired horse is always glad to do.

#### BITING.

This is either natural ferocity, or acquired from the teasing play of stable-boys. When a horse is tickled and pinched by thoughtless and mischievous youths, he will first pretend to bite his tormentors; by degrees he will proceed farther, and actually bite them, after that, he will be the first to challenge to the combat. At length, this war, half playful and half in earnest, becomes habitual to him, and degenerates into absolute viciousness. It is not possible to enter the stall of some horses without danger. A stallion addicted to biting is a most formidable creature. He lifts the intruder-attacks him with his feet-tramples upon him, and there are many instances in which he effects irreparable mischief. A resolute groom may escape. When he has once got firm hold of the head of the horse, he may back him, or muzzle him, or harness him; but he must be always on his guard. It is seldom that anything can be done in the way of cure. Kindness will aggravate the evil, and no degree of severity will correct it. "I have seen," says Professor Stewart, "biters punished until they trembled in every joint, and were ready to drop, but have never in any case known them cured by this treatment, or by any other. The lash is forgotten in an hour, and the horse is as ready and determined to repeat the offence as before. He appears unable to resist the temptation, and in its worst form biting is a species of insanity."

Prevention, however, is in the power of every proprietor of horses. While he insists on gentle and humane treatment of his cattle, he should systematically forbid this horse-play.

#### GETTING THE CHEEK OF THE BIT INTO THE MOUTH

Some horses are very expert at it. They soon find what advantage it gives them over their driver, who by this manœuvre loses almost all command. Harsh treatment is useless. All that can be done is, by fastening a round piece of leather on the inside of the cheek of the bit.

#### KICKING.

This, as a vice, is another consequence of the culpable habit of grooms and stable-boys of teasing the horse. There is no cure for this vice; and he cannot be justified who keeps a kicking horse in his stable. Some horses acquire, from mere irritability and fidgetiness, a habit of kicking at the stall or the bail, and particularly at night. Mares are far more subject to it than horses. Before the habit is inveterately established, a thorn bush or a piece of furze fastened against the partition or post will sometimes effect a cure. When the horse finds that he is pretty severely pricked, he will not long continue to punish himself. A much more serious vice is kicking in harness. From the least annoyance about the rump or quarters, some horses will kick at a most violent rate, and destroy the bottom of the chaise, and endanger the limbs of the driver. Those that are fidgety in the stable are most apt to do this. If the reins should perchance get under the tail, the violence of the kicker will often be most outrageous; and while the animal presses down his tail so tightly that it is almost impossible to extricate the reins, he continues to plunge until he has demolished everything behind him. This is a vice standing foremost in point of danger, and which no treatment will always conquer. It will be altogether in vain to try coercion. If the shafts are very strong and without flaw, or if they are plated with iron underneath, and a stout kicking-strap resorted to which will barely allow the horse the proper use of his hind limbs in progression, but not permit him to rise them sufficiently for the purpose of kicking, he may be prevented from doing mischief; or if he is harnessed to a heavy cart, and thus confined, his efforts to lash out will be restrained: but it is frequently a very unpleasant thing to witness these attempts, though.



ineffectual, to demolish the vehicle, for the shafts or the kicking-strap may possibly break, and extreme danger may ensue. The man, however, who must come within reach of a kicker should come as close to him as possible. The blow may thus become a push.

#### UNSTEADINESS WHILE BEING MOUNTED.

When this merely amounts to eagerness to start, it may be remedied by an active horseman. Severity will here, more decidedly than in any other case, do harm. The rider should be fearless—he should carelessly and confidently approach the horse, mount at the first effort, and then restrain him for a while; patting him, and not suffering him to proceed until he becomes perfectly quiet. Horses of this kind should have sufficient exercise. When the difficulty of mounting arises, not from eagerness to start, but unwillingness to be ridden, the sooner that horse is disposed of the better.

#### REARING.

This sometimes results from playfulness, but it is oftener a desperate effort to unhorse the rider, and consequently a vice. The horse that has decidedly reared, should never be trusted again, unless, indeed, it was the fault of the rider, who had been using a deep curb and a sharp bit. The horse-breaker's remedy, that of pulling the horse backward on a soft piece of ground, should not be practised. Many horses have been injured in the spine, and others have broken their necks, by being thus suddenly pulled over.

#### RUNNING AWAY.

Some headstrong horses will occasionally endeavor to bolt with the best rider. Others with their wonted sagacity endeavor thus to dislodge the timid or unskillful one. Some are hard to hold, or bolt only during the excitement of the chase; others will run away, prompted by a vicious propensity alone. There is no certain cure here. The method which affords any probability of success is, to ride such a horse with a strong curb and sharp bit; to have him always firmly in hand; and, if he will run away, and the place will admit of it, to give him (sparing neither curb, whip, nor spur) a great deal more running than he likes.

## VICIOUS TO CLEAN.

It would scarcely be credited to what an extent this exists in some horses that are otherwise perfectly quiet. If horses have been curried with a broken comb, or hardly rubbed with an uneven brush, the recollection of the torture they have felt makes them vicious, during every succeeding operation of the kind. This, however, is a vice that may be conquered. If the horse is dressed with a lighter hand, and wiped rather than brushed, and the places where the skin is most sensitive are avoided as much as thorough cleanliness will allow, he will gradually lose the recollection of former ill-treatment, and become tractable and quiet.

## VICIOUS TO SHOE.

The correction of this is more peculiarly the business of the smith. It may be expected that there will be some difficulty in shoeing a horse for the first few times. It is an operation that gives him a little uneasiness. The man to whom he is most accustomed should go with him to the forge; and if another and steady horse is shod before him, he may be induced more readily to submit. It cannot be denied that the majority of horses *vicious to shoe* are rendered so by harsh usage, and by the pain of correction being added to the uneasiness of shoeing. There are few horses that may not be gradually rendered manageable for this purpose by mildness and firmness in the operator. They will soon understand that no harm is meant, and they will not forget their usual habit of obedience. This is a very serious vice, for it not only exposes the animal to occasional severe injury from his own struggles, but also from the correction of the irritated smith, whose limbs and whose life being in jeopardy, may be forgiven if he is sometimes a little too hard-handed. Such a horse is very liable, and without any fault of the smith, to be pricked and lamed in shoeing. If, therefore, mild treatment will not correct this vice, the horse cannot be too soon got rid of.

## SWALLOWING WITHOUT GRINDING.

Some greedy horses habitually swallow their corn without properly grinding it, and the power of digestion not being adequate to the dissolving of the husk, no nutriment is extracted, and the oats are voided whole. This is particularly

the case when horses of unequal appetite feed from the same manger. Some horses, however, are naturally greedy feeders, and will not, even when alone, allow themselves time to chew or grind their corn. In consequence of this they carry but little flesh, and are not equal to severe work. The remedy is, not to let such horses fast too long. The nose-bag should be the companion of every considerable journey. The food should likewise be of such a nature that it cannot be rapidly bolted. Chaff should be plentifully mixed with the corn, and, in some cases, and especially in horses of slow work, it should, with the corn, constitute the whole of the food. In every case of this kind the teeth should be carefully examined. Some of them may be unduly lengthened, particularly the first of the grinders; or they may be ragged at the edges, and may abrade and wound the cheek; these animals, as too often happens in sore throat, would rather starve than put themselves to much pain.

#### CRIB-BITING.

This is a very unpleasant habit, and a considerable defect, although not so serious a one as some have represented. The horse lays hold of the manger with his teeth, violently extends his neck, and then, after some convulsive action of the throat, a slight grunting is heard, accompanied by a sucking or drawing in of air. It is not an effort at simple eructation, arising from indigestion. It is the inhalation of air. The effects of crib-biting are plain enough. The teeth are injured and worn away, and that, in an old horse to a very serious degree. A considerable quantity of corn is often lost, for the horse will frequently crib with his mouth full of it, and the greater part will fall over the edge of the manger. Much saliva escapes while the manger is thus forcibly held, the loss of which must be of serious detriment in impairing the digestion. The crib-biting horse is notoriously more subject to colic than other horses, and to a species difficult of treatment and frequently dangerous. Although many a crib-biter is stout and strong, and capable of all ordinary work, these horses do not generally carry so much flesh as others, and have not their endurance. On these accounts crib-biting has very properly been decided to be unsoundness. It is one of those tricks which are exceedingly contagious. Every companion of a crib-biter in the same stables is likely to acquire the habit, and it is the most inveterate of all habits. In defiance of the annoyance which these may occasion, the horse

will persist in the attack on his manger. A strap buckled tightly round the neck, by compressing the wind-pipe, is the best means of preventing the possibility of this trick; but the strap must be constantly worn, and its pressure is too apt to produce a worse affection, viz., an irritation in the wind-pipe, which terminates in roaring. The only remedy is a muzzle, with bars across the bottom; sufficiently wide to enable the animal to pick up his corn and to pull his hay, but not to grasp the edge of the manger. If this is worn for a considerable period, the horse may be tired of attempting that which he cannot accomplish, and for a while forget the habit, but, in a majority of cases, the desire of crib-biting will return with the power of gratifying it. The causes of crib-biting are various and some of them beyond the control of the proprietor of the horse.

#### WIND-SUCKING.

This bears a close analogy to crib-biting. The horse stands with his neck bent; his head drawn inward; his lips alternately a little opened and then closed, and a noise is heard as if he were sucking. This diminishes the value of the horse almost as much as crib-biting; it is as contagious, and it is as inveterate. The only remedies are tying the head up, except when the horse is feeding, or putting on a muzzle with sharp spikes towards the neck, and which will prick him whenever he attempts to rein his head in for the purpose of wind-sucking.

#### CUTTING.

Of this habit, we would advise the owner of a cutting horse, without trying any previous experiments of raising or lowering the heels, to put on the cutting foot a shoe of even thickness from heel to toe, not projecting in the slightest degree beyond the crust, and the crust itself being rasped a little at the quarters. The shoe should be fastened as usual, on the outside, but with only one nail on the inside, and that almost close to the toe.

#### NOT LYING DOWN.

It happens that a horse will seldom lie down in the stable. He continues in apparent good health, and feeds and works well; but his legs swell, and he becomes fatigued

sooner than another horse. No means, gentle or cruel, will force him to lie down. The secret is that he is tied up, and either has never dared to lie down through fear of the confinement of the halter, or he has been cast in the night, and severely injured. If he can be suffered to range the stable, or have a comfortable box, in which he may be loose, he will usually lie down the first night. Some few horses will lie down in the stable, and not in a loose box. A fresh, well-made bed will generally tempt the tired horse to refresh himself with sleep.

#### OVERREACH.

This unpleasant noise, known also by the term "clicking," arises from the toe of the hind foot knocking against the shoe of the forefoot. In the trot, one fore leg and the opposite hind leg are first lifted from the ground and moved forward, the other fore leg and the opposite hind leg remaining fixed; but, to keep the centre of gravity within the base, and as the stride, or space passed over by these legs, is often greater than the distance between the fore and hind feet, it is necessary that the fore feet should be alternately moved out of the way for the hind ones to descend. Then, as occasionally happens with horses not perfectly broken, and that have not been taught their paces, and especially if they have high hinder quarters and low fore ones, if the fore feet are not raised in time, the hind feet will strike them. The fore foot will generally be caught when it has just begun to be raised, and the toe of the hind foot will meet the middle of the bottom of the fore foot. It is an unpleasant noise, and not altogether free from danger. If the animal is young, the action of the horse may be materially improved; otherwise nothing can be done, except to keep the toe of the hind foot as short and as round as it can safely be, and to bevel off and round the toe of the shoe, like that which has been worn by a stumbler for a fortnight, and perhaps, a little to lower the heel of the fore foot.

#### PAWING.

Some irritable horses are restless, and paw frequently. Their litter is destroyed, the floor of the stable broken up, the shoes worn out, the feet bruised, and the legs sometimes sprained. Shackles are the only remedy, with a chain sufficiently long to enable the horse to shift his posture, or move in his stall; but these must be taken off at night, otherwise the animal will seldom lie down.

## QUIDDING.

A horse will sometimes partly chew his hay, and suffer it to drop from his mouth. If this does not proceed from irregular teeth, which it will be the business of the veterinary surgeon to rasp down, it will be found to be connected with sore-throat, and then the horse will exhibit some other symptom of indisposition, and particularly, the swallowing of water will be accompanied by a peculiar gulping effort. In this case, the (catarrh, with sore-throat) must be attacked, and the quidding will cease.

## ROLLING.

This cannot be indulged in the stable without the chance of his being dangerously entangled with the collar rein, and being cast. Yet, although the horse is cast, and bruised, and half-strangled, he will roll again on the following night, and continue to do so as long as he lives. The only remedy is, the horse should be tied with length enough of collar to lie down, but not to allow of his head resting on the ground; because, in order to roll over, a horse is obliged to place his head quite down upon the ground.

## SHYING.

In the treatment of shying, it is of great importance to distinguish between that which is the consequence of defective sight, and what results from fear, or newness of objects, or mere affectation or skittishness. The severe use of the whip and spur cannot do good, and are likely to aggravate the vice tenfold. A word half encouraging and half scolding, with a gentle pressure of the heel, or a slight touch of the spur, will tell the horse that there is nothing to fear, and will give him confidence in his rider on a future occasion. It should be remembered, however, that although a horse that shies from defective sight may be taught considerable reliance on his rider, he can never have the cause of the habit removed. We may artificially strengthen the human sight, but that of the horse must be left to itself. The shying from skittishness or affectation is quite a different affair, and must be conquered; but how? Severity is altogether out of place. The way to cure him is to go on, turning as little as possible out of the road giving a harsh word or two, and a gentle

touch with the spur, and then taking no more notice of the matter. After a few times, whatever may have been the object which he chose to select as the pretended cause of affright, he will pass it almost without notice.

*Shying on coming out of the stable* is a habit that can rarely be cured. It proceeds from the remembrance of some ill-usage or hurt which the animal has received in the act of proceeding from the stable, such as striking his head against a low doorway, or entangling the harness. Coercion will but associate greater fear and more determined resistance with the old recollection. When the cure, however, is early attempted, it may be so far overcome that it will be unattended with danger or difficulty. The horse shall be bridled when led out or in. He should be held short and tight by the head that he may feel he has not liberty to make a leap, and this of itself is often sufficient to restrain him. Punishment, or a threat of punishment, will be highly improper. It is only timid or high-spirited horses that acquire this habit, and rough usage invariably increases their agitation and terror. Some may be led out quite at leisure when blindfolded; others when they have the harness bridle on; some will best take their own way, and a few may be ridden through the doorway that cannot be led. By quietness and kindness, however, the horse will be most easily and quickly subdued.

#### SLIPPING THE COLLAR.

This is a trick at which many horses are so clever that scarcely a night passes without their getting loose. It is a very serious habit, for it enables the horse sometimes to gorge himself with food, to the imminent danger of staggers; or it exposes him, as he wanders about, to be kicked and injured by the other horses, while his restlessness will often keep the whole team awake. If the web of the halter, being first accurately fitted to his neck, is suffered to slip only one way, or a strap is attached to the halter and buckled round the neck, but not sufficiently tight to be of serious inconvenience, the power of slipping the collar will be taken away.

#### TRIPPING.

If it arises from a heavy forehand, and the fore legs being too much under the horse, no one can alter the natural frame of the animal; if it proceeds from tenderness of the foot, grogginess, or old lameness, these ailments are seldom cured.

A known stumbler should never be ridden. A tight hand or a strong-bearing rein are precautions that should not be neglected, although they are generally of little avail; for the inveterate stumbler will rarely be able to save himself, and this tight rein may sooner and farther precipitate the rider. If the stumbler has the foot kept as short and the toe pared as close as safety will permit, and the shoe is rounded at the toe, or has that shape given to it which it naturally acquires in a fortnight from the peculiar action of such a horse, the animal may not stumble quite so much, but in almost every case a stumbler should be put to slow and heavy work. If the latter alternative is adopted, he may trip as much as he pleases, for the weight of the load and the motion of the other horses will keep him upon his legs.

#### WEAVING.

This consists in a motion of the head, neck, and body, from side to side, like the shuttle of a weaver passing through the web, and hence the name which is given to this peculiar and incessant and unpleasant action. It indicates an impatient, irritable temper, and a dislike to the confinement of the stable. A horse that is thus incessantly on the fret will seldom carry flesh, or be safe to ride or drive. There is no cure for it, but the close tying-up of the animal, or at least allowing him but one loose rein, except at feeding-time.



## BREAKING TO HARNESS.

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Mr. Rarey is entitled to every credit for introducing a novel mode of controlling a vicious horse, which is also of service in training cavalry and circus horses. Beyond these departments, however, his plans effect no good, and instead of improving the mouth they have a tendency to injure it. I have shown that time and patience are grand elements of success in horse-breaking, and that it is a disadvantage to hasten the process, which is all that Mr. Rarey pretends to effect. We do not want to manage our horses without reins, but on the contrary to guide them and stop them with the slightest possible touch consistent with the equilibrium to be maintained in the saddle. Hence the first object is the formation of a good mouth, and as this requires a considerable time to develop, there are ample opportunities for gradually accustoming the colt to the presence and control of his master while it is being produced.

### THE EARLY PROCEEDINGS

in breaking a colt to harness are exactly the same as for the saddle, and indeed it is well in all cases to make him handy to ride before he is put into the break. We may therefore assume that this has been done, or at all events that a good mouth has been made, and the colt handled and accustomed to bear the hip-straps hanging loosely over his sides prior to putting him in harness.

### THERE IS SOME DIFFERENCE OF OPINION

among breakers as to the best plan of conducting this operation. Some contend that for every kind of harness the horse ought to be put in with another, who will compel him to move or stop at the will of the driver. Others assert that

on the contrary, every young horse should be put in first by himself, and then if he refuse to move, he can be allowed to wait till he is tired of inactivity, which practically he soon is. My own opinion is founded upon more than twenty years' experience with all sorts of horses, and I am persuaded that by far the safest and best method is to put every horse into double harness first. Many farmers break their colts in by putting them to plough between two other horses, but the pull at this work is too dead for well-bred colts, and many jibbers are produced in this way. Every high-couraged horse has a tendency to jump forward on the first impulse to do so, and feeling the restraint of the collar he is irritated to increase his pull, whereby his shoulders are galled, causing him to dislike his work from the pain which he suffers. It is quite possible to break in a colt of average good temper for single harness without putting him first into double, but the plan is always attended with danger to both horse and driver, and I should strongly caution my readers against it. Even after two or three lessons in the double break, which have been quietly submitted to, the colt often turns restive when put in by himself, but still by that time he knows what he has to do, and is not made sulky by being punished without cause.

#### THE APPARATUS

necessary for breaking to harness consists of, 1st, a set of strong double and single harness, made in the ordinary way, except that the crupper for the colt should buckle on one side; 2dly, a double break of the ordinary construction; but it is a safe plan to have the whole space between the fore carriage and the splinter-bar made up with iron rods so close together that, if a horse kicks, he cannot get his legs hung over the bar; 3dly, a single break, to be hereafter described.

#### BEFORE THE COLT

is put to draw he should be accustomed to the pressure of the harness, and, as a matter of course, in any case he must have this put on him. Every groom ought to know how to do this, but at the same time in a colt he should be cautioned to proceed slowly and quietly, so as not to frighten him. The plan of showing the horse everything which is to be put on him is a very good one, and taking advantage of it, before the collar is slipped over the head, a little time may be allowed for the future wearer of it to smell it and examine it

with his eyes also. Many breakers, to avoid the danger of alarming their pupils by putting the collar over their heads, have this part made to open at the withers, where a buckle secures it after it has been slipped up under the neck. But collars made in this way are not so firm as when constructed in the ordinary mode, and are more liable to punish the shoulders, so that what is gained in one way is lost in the other. A quiet and handy man can always slip a collar over a horse's head if he will take time, and especially if he has previously handled the animal and made him accustomed to his presence. As soon as this part of the harness is in its place the pad and crupper must be gently put on the back, and then quietly raising the tail with every hair gathered and firmly grasped in the left hand, the right slips the crupper under it, and as soon as this is done, the left drops the tail and assists the right to buckle the two parts together. In the previous breaking the colt has been accustomed to the crupper, so that there is no occasion for extra care in this part now. The pad is then drawn forward to its place, the bellyband buckled, and the rest of the harness being put on in the ordinary way, the colt is allowed to feel it for a few minutes, and should then be led out in a yard or other convenient place for an hour. The general practice is after this to put him to at once, but it is far better if the colt is at all shy to take off the harness and postpone the commencement of actual breaking till the next day.

#### THE ACTUAL PUTTING TO

is managed differently in double and single harness, but as I have endeavored to show that the former should always precede the latter, I shall commence by describing it. In breaking to double harness a steady old horse should be provided, usually called a break-horse. All that is wanted is an animal of good courage and free from vice, who will draw steadily off on the slightest notice, and will stop firmly when required. Some old horses which have had a great deal of practice in the break will assist their masters in a wonderful manner. If a colt kicks over the pole they will press against the intruding leg and cause him so much pain that he remains quiet till he is relieved. Indeed, it matters not what the attempt is, they defeat it by some counter manoeuvre, but these horses are rare and fortunately are by no means essential to success. Before attaching the colt the break-horse should be put to, and it is usual to place him on the near side. Then having the break conveniently situated for start-

ing, the colt is brought out with a halter on and the cord knotted to his tracebearer, so as to give a good hold in case he plunges or kicks. The pole-piece is then loosely buckled up, after which the inside trace is slipped over the roller bolt, and then the breaksman, pushing the quarters forcibly inwards, the outside trace is carefully adjusted and the pole-piece buckled up to its proper length. Quickly but quietly and without fuss the reins are crossed and buckled, and the ends being taken by the breaker he mounts to the box, gives the word to the break-horse to move, and the break is quietly started without any notice to the colt, or effort on his part. In the great majority of instances no resistance is made, and all goes on smoothly for some time. The break should be driven slowly for three or four miles, and then the breaksman who assists the breaker going to the side of the colt pulls him round by the halter as the breaker drives the break-horse in a wide circle for turning. In returning the horses should be stopped and started again several times, and if the colt is pretty handy the turning may be repeated once or twice, but more than an hour's drive should not be attempted for fear of galling the shoulders, to prevent which the inside of the collar should be well oiled on all occasions just before starting. When taking the young horse out, the process of putting to should be exactly reversed. A repetition of this lesson, and constant turning into narrow lanes and crowded streets, together with uphill and downhill work, will soon make the young horse handy in double harness, though for town work a considerable time must elapse before he can be depended upon in a crush, especially without a steady companion. No horse should be depended upon until he has been roused either by accidental circumstances, or, if these do not present themselves, by an application of the whip, for it often happens that a colt will go quietly enough while his temper is unruffled, but when it is once upset he shows fight until he is conquered or himself gains the victory. Now it is far better that this should occur while in the hands of the breaker than after he is sent home as thoroughly perfect in harness.

When the colt has had six lessons in double harness, he may be put in the shafts. The single-break is a strong two-wheeled vehicle, with straight tough shafts. It should be high enough to keep the horse from kicking over the drawing bar. No bearing-rein should be employed; and the tugs should be made open above, so as to drop the shafts into them. A kicking-strap and safety-rein should be used, for fear of accidents. Beyond these expedients, nothing more is required than time and practice.

## Bonner's Great Stables in December 1879.

We here give a reliable list of the great editor's fast horses—by all odds the greatest collection of fast trotters that the world has ever known. There are now in his stable, West Fifty-fifth street, near Fifth avenue, ten horses, every one of which, with a single exception, has trotted in 2.20, or better. The exception is Mamie B, by Edward Everett, dam St. Lawrence Maid. She is a diminutive specimen of horseflesh, standing about 14.1. Edwin Forrest towers above the little mare. He is a fraction over 16 hands. He is seven years old, and was got by a son of Joe Downing, the son of Alexander's Edwin Forrest; his dam was a high-bred mare, said to be a granddaughter of the great Leviathan. At Hartford, Forrest trotted an exhibition mile in 2:14 1-2, and in the repeat went to the half-mile pole in 1:05 1-4, where no other horse has yet gone in a race. Dexter, by Rysdyk's Hambletonian, dam by American Star, is twenty years old. He attracts, if possible, more attention in Mr. Bonner's stable than Edwin Forrest. He was the first horse to trot in 2:17 1-4, his present record. In his race against Ethan Allen and running mate he was timed a mile in 2:16. At Prospect Park, Mr. Bonner drove Dexter to road wagon, weight 319 lbs., a mile in 2:21 3-4, a performance which has never been equaled. Music is a very bloodlike-looking mare, a chestnut, standing full 16 hands. She is eleven years old, and was got by Middletown, by Rysdyk's Hambletonian, dam by Roe's Fiddler, a grandson of Monmouth Eclipse. She is an excellent double-harness performer, and is hard to beat single. John Taylor, 9 years old, and pedigree not established, is as fine in all his points as a thoroughbred. He gained a public record of 2:25 his first season on the turf, but has trotted a mile on Mr. Bonner's three-quarter track in 2:18 3-4. Startle, bred at Stony Ford, 11 years old, and by Rysdyk's Hambletonian, dam by American Star, is the biggest horse for his inches in the country. He is 15.1, under the standard. Startle trotted half a mile in 1:04 1-2, in harness, and pulled a road-wagon at Fleetwood a quarter in 32 1-2 seconds—a 2:10 gait. The stallion was then put into the stud, and his three-year-old colts are quite promising. Molsey, a bay mare, by Whiteside's Black Hawk, first dam by Dallas, and second dam by imp. Leviathan, is scant 15.2. She has a speedy form, and obtained a record of 2:21 3-4. She has since been timed a mile on the three-quarter track in 2:18 1-4. Malice, 8 years old, bred at Woodburn, and by Woodford Mambrino, out of Malmaison, by Alexander's Abdallah, the sire of Goldsmith Maid is a nervy, up-headed bay

mare, 15.2. As a six-year-old, she showed a mile in 2:29 1-2 on Mr. Alexander's track; as a seven-year-old, a mile in 2:25 3-4, and as an eight-year-old, she trotted a mile on Mr. Bonner's track in 2:20. May Bird, by George Wilkes, by Rysdyk's Hambletonian, is a black or brown mare, with three white feet, 15.1 1-4 over the withers and 15.1 over the rump. She has won close on to seventy heats in 2:30 or better, and gained a record of 2:19 3-4 to saddle, 2:21 in harness, and 2:24 1-2 to wagon. She has trotted a mile on Mr. Bonner's track in 2:18 3-4. Maud Macey, a chestnut mare, 7 years old, was bred in Kentucky, and got by Joe Hooker, by Mambrino Chief, first dam by Star Denmark, and second dam by Camden. She stands 15.2, and has a rakish form. As a two-year-old, she trotted in 2:49; as a three-year-old, in 2:44; as a four-year-old, in 2:31; as a five-year-old, in 2:27 3-4; as a six-year-old, in 2:23 1-4, and as a seven-year-old she pulled a sulky and a driver weighing 180 lbs. a mile on Mr. Bonner's three-quarter track, in 2:17, the fastest time ever made on it. Her fastest mile was trotted Oct. 16, and the fractional time was: 34 1-2, 1:07 3-4, 1:42 1-4, 2:17.

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In addition to the ten 2:20 horses above named, Mr. Bonner has, at his farm, Pocahontas, who has trotted in 2:17 3-4; Grafton, who showed a public trial at Cleveland, in 2:15 1-2; Joe Elliott, with a public trial at Boston, in 2:15 1-2; Wellesley Boy, who has trotted in 2:19 1-2; Eric, who has trotted in 2:20 3-4; Manetta, who has been timed in 2:22 1-2; Astoria, the sister of Dexter, who has gone a mile in 2:23 3-4; Centennial, who has trotted in 2:23 3-4; and Keene Jim, with a four-year-old record of 2:24 1-2. We may wind up this list with Rarus—though last not (only) least—but probably the first trotter in the world. He has actually trotted his mile in 2:11 1-2!

## 2.30 HORSES.

BY AJAX.

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Goldsmith Maid, by Alexander's Abdallah, dam by Abdallah.....	2:17
Dexter, by Hambletonian, dam by American Star.....	2:17 1-4
Lady Thorne, by Mambrino Chief, dam by Gano, by American Eclipse ..	2:18 1-4
American Girl, by Amos' Clay, dam said to be thoroughbred .....	2:19
George Palmer, by the Bogus horse, dam a Clay mare.....	2:19 1-4
Flora Temple, by One-Eyed Hunter.....	2:19 3-4
Henry, by Magna Charta.....	2:20 1-4
Mountain Boy, by Edward Everett, dam by Reebuck.....	2:20 1-2
General Butler, by Smith Burr, by Napoleon .....	2:21
Rolla Golddust, by Golddust, to saddle .....	2:21
George Wilkes, by Hambletonian.....	2:22
Princess, by Michael Reaker.....	2:22
Jay Gould, by Hambletonian, dam by American Star.....	2:22
Rockingham, to saddle.....	2:22 1-4
Lucy, by G. M. Patchen, dam May Day.....	2:22 1-2
G. M. Patchen, by O. M. Clay, dam by Trustee.....	2:22 1-2
Fearnaught, by Young Morrill.....	2:23 1-4
Bashaw, Jr., by Green's Bashaw.....	2:23 1-2
Rhode Island, by Whitehall, by North American.....	2:23 1-2
Hotspur, by Ethan Allen, dam by Abdallah.....	2:23 1-2
Billy Barr (formerly W. B. Whiteman), by Ethan Allen.....	2:23 3-4
Kirkwood, by Green's Bashaw.....	2:24
Draco Prince, by Draco, dam Vermont Black Hawk.....	2:24
Ch. Medoc (formerly John Morgan), by Pilot, dam by Medoc .....	2:24
Beppo, by Hambletonian, dam by Abdallah.....	2:24 1-2
Chicago (formerly Rocky), by Ole Bull, by Pilot, dam by American Eclipse.....	2:24
Toronto Chief, by Royal George.....	2:24 1-4
Major Allen (formerly Locust), by Young Ethan Allen .....	2:24 1-4
California Damsel, by son of Long Island Black Hawk.....	2:24 1-2
Prince Hartford, by Nonpareil, son of Long Island Black Hawk.....	2:24 1-2
Pilot Temple, by Pilot, Jr., dam by Flora Temple's dam.....	2:24 1-2
Myron Perry, by Young Columbus, dam by Hopkins' Abdallah.....	2:24 1-2
Green Mountain Maid, by Harris' Hambletonian .....	2:24 3-4
Silas Rich, by Young Priam .....	2:24 3-4
Clara G., to saddle .....	2:25
G. M. Patchen, Jr. (California Patchen), by G. M. Patchen, dam Bell- founder mare.....	2:25

W. H. Allen, by Volunteer, dam by Abdallah.....	2:25
Mac.....	2:25
Commodore Vanderbilt, by Young Columbus.....	2:25
Frank Vernon (formerly Panic), by Sherman's Black Hawk (North Horse), dam Vermont Hambletonian.....	2:25
Ethan Allen, by Hill's Black Hawk.....	2:25
Yellow Jacket.....	2:25
Lancet, by Vermont Black Hawk, to saddle.....	2:25
Brown Dick, by 2d Star.....	2:25 1-4
Gray Eagle (thoroughbred), by Gray Eagle, dam by Imp. Trustee.....	2:25 1-2
Fannie Allen, by Ethan Allen, dam Cherub, by Abdallah.....	2:25 1-2
Gray Mack, by son of Hill's Black Hawk.....	2:25 1-2
Centreville, by Henry Clay.....	2:25 1-2
Tacony, by Sportsman.....	2:25 1-2
Nonesuch, by Daniel Lambert, by Ethan Allen, dam by son of Vermont Black Hawk.....	2:25 1-2
Judge Fullerton, by Edward Everett.....	2:25 1-4
Tom Jefferson, by Toronto Chief, dam by Wagner.....	2:25 1-2
Charles E. Loew, by G. M. Patchen, dam by Abdallah.....	2:25 1-2
J. J. Bradley.....	2:25 1-2
Byron, by Field's Royal George, dam by Morgan.....	2:25 1-2
Harry Harly, (formerly Columbia Chief,) by Young Columbus, dam by Harris' Hambletonian.....	2:25 3-4
Jeff Davis.....	2:25 3-4
Colonel Russell.....	2:25 3-4
License.....	2:25 3-4
Belle Strickland, by Eaton Horse.....	2:25
Billy Haskins, by Ed. Forest, dam Pilot, Jr.....	2:25
Belle of Portland.....	2:25
Tattler, by Pilot, Jr., dam by Medoc.....	2:25
Tackey, by Pilot, Jr.....	2:25
W. K. Thomas, by Osceola, by son of Pilot.....	2:25
May Queen, by May Day.....	2:25
Confidence.....	2:25
Huntress, by Volunteer, dam by American Star.....	2:25
Triumph, (formerly Joe).....	2:25 1-4
Ben Cumming, by Columbus, dam Mambrino.....	2:25
H. W. Genet, by son of G. M. Patchen.....	2:25
Lady Suffolk, by Engineer.....	2:25
Surprise, by Harry Clay.....	2:25
Cooly, by Daniel Boone (a pacer).....	2:25
Leviathan, to saddle.....	2:25
Sleepy John.....	2:25 1-4
Bay Whalebone.....	2:25 1-4
Lady Emma, by Jupiter, dam by Abdallah.....	2:25 1-4
Royal John, by Woodstock Morrill.....	2:25 1-4
Queen of the West, by Pilot, Jr.....	2:25 1-4
Stockbridge Chief.....	2:25 1-2
Black Mack.....	2:25 1-2
Matthew Smith.....	2:25 1-2
Mohawk, Jr., by Mohawk, by Long Island Black Hawk.....	2:25 1-2
Susie, by Hampden Boy, grandsire Vermont Black Hawk.....	2:25 1-2
Little Fred, dam Dirigo, by Drew.....	2:25 3-4
Pocahontas, by Ethan Allen, dam Pocahontas, the pacer.....	2:25 3-4
Sea Foam, by Young Columbus.....	2:25 3-4
Gilbraith Knox, by General Knox, he by North Horse.....	2:25 3-4
Clara (late Crazy Jane), by Sager Horse.....	2:27
Idol, by Black Warrior.....	2:27
Highland Maid by Saltram.....	2:27
Western Girl (formerly Angeline), by son of Bellfounder.....	2:27
Lookout.....	2:27
Sir Walter.....	2:27
Lottery, by Hambletonian.....	2:27
Aggy Down, to saddle.....	2:27
General Taylor, to saddle.....	2:27
Sorrel Dan, by Magna Charta.....	2:27
Lady Woodruff, by Washington.....	2:27
Tammany, by Son of Rising Sun.....	2:27
Ben Higdon, by Abdallah.....	2:27
Uncle Abe, by Young Morrill.....	2:27



Alcesse, by Commodore, dam by Hill's Black Hawk.....	2:27
Amos, ch., by Jupiter Abdallah, dam by Trustee.....	2:27
Andy Mac, to saddle, (Hambletonian).....	2:27
Arth Star Mambrino, by Mambrino Chief.....	2:27 1-4
Ar of the West.....	2:27 1-4
Aradia Thompson, by Wild Wagoner, by G. M. Patchen.....	2:27 1-2
Araco, by Young Morrill.....	2:27 1-2
Arapid, by Toronto Chief, to saddle.....	2:27 1-2
Aricago Jack, by Merrick Horse, to saddle.....	2:27 1-2
Ararence.....	2:27 1-2
Arcommodore Nutt, by Grantham Chief, by Royal George.....	2:27 1-2
Arollie, Delphi's dam, by Abd-el-Kader.....	2:27 1-2
Arack Douglass, by Henry Clay.....	2:27 1-2
Ar White.....	2:27 1-2
Arreadnaught.....	2:27 1-2
Armambrino Pilot, by Mambrino Chief, dam by Pilot, to saddle.....	2:27 1-2
Araveler.....	2:27 1-2
Arpepy John, dam by Red Bird.....	2:27 1-2
Arark, by Hambletonian, dam the grandam of Dexter, to saddle.....	2:27 3-4
Arlep. Knap, Jr., by Shep. Knap, he by Eaton Horse.....	2:27 3-4
Ar Jessie Wales, by Ajax, double.....	2:27 3-4
Ararkness, by Mambrino Chief, grandam by Pilot, double.....	2:27 3-4
Ar James H. Burke (late Governor Morgan).....	2:27 3-4
Ar Belle of Saratogo, by Vermont Black Hawk.....	2:28
Ar Auburn Horse, by Champion.....	2:28
Arannie Lee, by Ethan Allen, dam by Sherman's Black Hawk.....	2:28
Ar Black Harry Clay, by Neaves' C. M. Clay, Jr., dam by Imp. Bellfounder.....	2:28
Ar Blackbird.....	2:28
Ar Dutchess.....	2:28
Ar Pelham.....	2:28
Ar Rocket.....	2:28
Ar Young Woful.....	2:28
Ar Independence.....	2:28
Ar J. M. Botta, by Spalding's Abdallah.....	2:28
Ar Jilt.....	2:28
Ar Blonde, by Hoagland's Messenger, dam by Abdallah.....	2:28
Ar Dutchman, a second mile to saddle.....	2:28
Ar Mohawk, Jr., by son of Long Island Black Hawk.....	2:28
Ar Lady Shannon, by Harris' Hambletonian.....	2:28
Ar Tartar, by Royal George.....	2:28
Ar Grey Jack, of Morgan blood.....	2:28 1-4
Ar Miller's Damsel, by Andrew Jackson.....	2:28 1-4
Ar Twang, by Hiatoga, dam by Am. Eclipse.....	2:28 1-4
Ar Strideaway.....	2:28 1-2
Ar Charlie Green, by son of Abdallah.....	2:28 1-2
Ar Lady Garfield.....	2:28 1-2
Ar Battler.....	2:28 1-2
Ar Jim Porter.....	2:28 1-2
Ar Lady Shannon.....	2:28 1-2
Ar Mary, by G. M. Patchen.....	2:28
Ar B. Gen. McClellan, by Drew.....	2:28 1-2
Ar Lady Vernon.....	2:28 1-2
Ar Blackstone Belle, by Brandywine, he by Abdallah.....	2:28 1-2
Ar Young Columbus, by Columbus, dam Black Maria, grandam of Harris' Hambletonian.....	2:28 1-2
Ar Medoc.....	2:28 1-2
Ar Lew Sayers.....	2:28 3-4
Ar Jas. D. McMann.....	2:28 3-4
Ar Morrissey, by Black Warrior.....	2:28 3-4
Ar Fannie Kemble.....	2:28 3-4
Ar Lady Sheridan.....	2:28 3-4
Ar Grey Hawk.....	2:28 3-4
Ar Dutchman (formerly Derby), by Rough and Ready.....	2:28 3-4
Ar Joe Hooker, Jr., by Tom Hyer, a Black Hawk.....	2:28 3-4
Ar Drift (formerly Norwood), by Hambletonian, dam by Saltram.....	2:29
Ar Lew Pettee, by Norman.....	2:29
Ar Widow McCree, by American Star.....	2:29
Ar Western New York, by Nonpareil (son of Long Island Black Hawk), dam by Rysdyk's Hambletonian.....	2:29
Ar H. B. Patchen, by G. M. Patchen.....	2:29

Red Cloud.....	2
Woful, by Long Island Black Hawk.....	2
Medoc, Wh.....	2:25
Tom Parker.....	2:25
Bally Lewis, by Pilot, Jr.....	2:25
Miller's Damsel, by Edmond's Jackson, son of Andrew Jackson.....	2:25
Beindeer, by Monmouth Eclipse.....	2:25
Zac Taylor, by Quimby Horse.....	2:25
Honest Allen, by Ethan Allen, double.....	2:25
Draco, by Young Morrill.....	2:25
Lady Sherman, by North Horse.....	2:25
Contraband, dam by Thoroughbred.....	2:25
Old Man's Mare, by Young Andrew Jackson.....	2:25
Nelly Holcomb.....	2:25
Ella Elwood.....	2:25
N. B. Palmer.....	2:25
Putnam.....	2:25
Fleetwood.....	2:25
Rosamond, by Columbus.....	2:25
Tib Woodward.....	2:25
Major Edsall, by Alexander's Abdallah, dam by American Star.....	2:25
Up and Up.....	2:25
Grit.....	2:25
Nabockish, by Rising Sun.....	2:25
Pilot, by Pilot, Jr.....	2:25
Ed Foster, by Young St. Lawrence.....	2:25 14
Fanny Lee, by Ethan Allen, dam by the North Horse.....	2:29 14
Lexington, by Lexington.....	2:29 14
Edna.....	2:29 14
Bally Lewis, by American Star.....	2:29 14
Fearless, by Meeker Horse.....	2:29 14
Bruno, by Hambletonian.....	2:29 14
Harvest Queen, by Hambletonian, dam by American Star.....	2:29 14
New Berlin Girl.....	2:29 14
India Rubber, by Comet.....	2:29 14
Jake Oakley, by Long Island Black Hawk.....	2:29 14
Warwick, by Ethan Allen, dam Rachel.....	2:29 14
Dutch Girl, by Grey Eagle.....	2:29 14
Madawska Maid.....	2:29 14
John Fero, by imp. Consternation.....	2:29 14
Daisy Burns, by Skenado.....	2:29 34
Mountain Maid, by Morrill.....	2:29 34
Safe.....	2:29 34
Lady Ross, by Vergenes' Black Hawk, dam a Clay mare, grandam a Star mare.....	2:29 34
Lady Hughes, by Jupiter, dam by Weber's Tom Thumb.....	2:30
Lady Moscow.....	2:30
Old Put, by Clarion.....	2:30
Lady Sutton, by Morgan Eagle.....	2:30
Lady Augusta, by Hambletonian, dam by Saltram.....	2:30
Lady Vernon.....	2:30
Lady Jane.....	2:30
Bashaw Maid, by Plow Boy, by Long Island Black Hawk.....	2:30
Rose of Washington, by Smith Burr's Washington, saddle.....	2:30
Empress.....	2:30
W. H. Taylor, by Norman.....	2:30
Norman.....	2:30
Young Ripton.....	2:30
Black Ralph, by Vermont Black Hawk.....	2:30
Black Harry, double.....	2:30
Emperor.....	2:30
India Rubber, Comet.....	2:30
Centreville, by Henry Clay, dam by Mambrino.....	2:30
Uxbridge.....	2:30
Copper Bottom.....	2:30
Miller's Maid.....	2:30
Tarquin.....	2:30
Tom Parker.....	2:30
Western Metropolis.....	2:30
Fanny Pullen.....	2:30

Long Island.....	2:30
Ike Cook, by Abdallah.....	2:30
Joe Hooker.....	2:30
Silas.....	2:30
Whitebird, by Whitebird, a thoroughbred.....	2:30
Mazeppa.....	2:30
St. Elmo, by Alexander's Abdallah.....	2:30
Jack Rossiter.....	2:30
Strathmore.....	2:30
Sunnyside.....	2:30
Carrol (by Cardinal), by Vermont Black Hawk.....	2:30
Champagne, by Ed Forrest.....	2:30
Dan Mace.....	2:30
General McClennan, by Drew.....	2:30
Washington Irving, by Ethan Allen, to saddle.....	2:30
Belle of Toronto, by Royal George.....	2:30
Denmark.....	2:30
Jack Stewart, by Tom Wonder, dam by Harris' Hambletonian.....	2:30
My Hamilton.....	2:30
My, by Blue Bull, dam by Daniel Boone.....	2:30
ern.....	2:30

## A List of the Medicines and Recipes Used in the Treatment of the Diseases of the Horse.

**VINEGAR.**—Useful for sprains and bruises. Equal parts boiling water and cold vinegar.

**SPIRIT OF SALT.**—This acid is formed by the action of sulphuric acid on common salt. The best liquid caustic for corns, canker, indisposition in the sole to secrete good horn, wounds in the foot not attended by healthy action.

**NITRIC ACID,** a valuable external application, both a caustic and an anti-septic. Destroys fungus excrescences.

**SULPHURIC ACID, OR OIL OF VITRIOL.**—When mixed with tar, an ounce to the pound, it is a good application for the thrush and canker. A smaller quantity, mixed with olive oil, makes a good stimulating liniment.

**ALOES.**—The Barbadoes aloes have a greater purgative power than the Cape, gripe less and being safer, action is kept up longer.

**ALUM** is used internally in cases of over-purging—two drachms of the powder being added to a pint of hot milk. A solution of two drachms to a pint of water, forms alone, or with the addition of a small quantity of white vitriol, a very useful wash for cracked heels, and for grease generally; and also for those forms of swelled legs attended with exudation of moisture through the skin.

**ANODYNES.**—Opium is the only drug that will lull pain. It may be given as an anodyne, but it will also be an astringent in doses of 1, 2, or 3 drachms.

**CAMPHOR** diminishes frequency of pulse, and softens its tone. When long exhibited, it acts on the kidneys. Externally applied, it is an anodyne for chronic sprains, bruises, and tumors.

**SPANISH FLIES** are the basis of the most approved and useful veterinary blisters. An infusion of two ounces of the flies in a pint of oil of turpentine for several days, is occasionally used as a liquid blister; and when sufficiently lowered with common oil, it is called a sweating oil. They have been recommended for the cure of glanders. The dose is from 5 to 8 grains given daily, but withheld for a day or two when diuresis supervenes.

**GUINEA PEPPER.**—They are valuable as stimulants. Their beneficial effect in cases of cold is great. The dose is from a scruple to half a drachm.

**CARAWAY SEEDS.**—These and ginger, alone and combined, are the best stimulants used in horse practice.

**CASTOR OIL** is an expensive medicine. It must be given in large doses.

**JAPAN EARTH** is a useful astringent, given in over-purging, in doses of 1 or 2 drachms, with opium.

**CHARCOAL** is an anti-septic, made into a poultice with linseed meal, and applied to offensive ulcers and cracked heels.

**VERDIGRIS** is a mild caustic. Either alone, in the form of fine powder, or mixed with an equal quantity of the sugar of lead, it eats down proud flesh, or stimulates old ulcers to healthy action. When boiled with honey and vinegar, it constitutes the farrier's Egyptiacum, certainly of benefit in cankered or ulcerated mouth, for thrushes.

**BLUE VITRIOL** is valuable as an external application, dissolved in water, proportion of 2 drachms to a pint; acting as a gentle stimulant. An ounce dissolved in the same quantity of water, becomes a mild caustic. In the former proportion it rouses old ulcers to a healthy action, and disposes even recent wounds to heal more quickly than they otherwise would do; and in the latter it removes fungus granulations or proud flesh. It is also a good application for canker in the foot.

**CREOSOTE** is much valued on account of its anti-septic properties and in stopping hemorrhages. It is both a stimulant and a tonic. In an undiluted state it acts as a caustic. In the form of a lotion, a liniment, or an ointment, it has been useful in farcy and glanders, also in foot-rot, canker, and thrush. As a caustic, it acts as a powerful stimulant.

**DIGITALIS—FOXGLOVE.**—The leaves of the common foxglove, gathered about the flowering time, dried carefully in a dark place, and powdered, and kept in a close, black bottle. It is a direct and powerful sedative, diminishing the frequency of the pulse, and the general irritability of the system, and acting also as a mild diuretic: it is, therefore, useful in every inflammatory and febrile complaint, and particularly in inflammation of the chest. It is usually given in combination with emetic tartar and nitre. The average dose is 1 drachm of digitalis, 1 1-2 of emetic tartar, and 3 of nitre, repeated twice or thrice in a day.

**DIURETICS** constitute a useful class of medicines. They stimulate the kidneys to secrete more than the usual quantity of urine, or to separate a greater than ordinary proportion of the watery parts of the blood; but they should be mild, and not continued longer than the case requires.

**GEKTIAN** is a stomachic and tonic. 4 drachms of gentian, 2 of camomile, 1 of carbonate of iron, and 1 of ginger, will make an excellent tonic ball. An infusion of gentian is good for putrid ulcers,

**GINGER** is as valuable as a cordial as gentian is as a tonic. It is the basis of the cordial ball, and it is indispensable in the tonic ball.

**HELEBORE (BLACK).**—Used as a local application, and as such it is a powerful stimulant.

**INJECTIONS.**—See clysters.

**IODINE.**—One of the most valuable drugs used in the veterinary practice. It reduces every species of tumors. Iodine of potassium is administered internally, as a promoter of absorption. Combined with sulphate of copper, it forms a powerful tonic; whilst in the form of iodine of mercury, combined with lard, it becomes a powerful blister, and promotes absorption.

**CHLORIDE OF LIME.**—Diluted with twenty times its quantity of water, helps to form the poultice applied to offensive discharges. The fetid smell of fistulous withers, poll-evil, canker, and ill-conditioned wounds, is immediately removed, and the ulcers are more disposed to heal.

**LINSEED** is often used instead of water for the drink of the horse with sore throat or catarrh, or disease of the urinary organs, or of the bowels.

**MASHES.**—An important part of horse provender, in sickness or health.

**MUSTARD SIXAPIS.**—Useful if, in inflammation of the chest or bowels, it is well rubbed on the chest or abdomen.

**NITROUS ETHER (SPIRIT OF).**—Very useful medicine in the advanced stages of fever.

**OPIUM.**—Is a valuable drug; a powerful anti-spasmodic, sedative, and artringent.

**PALM OIL** is the very best substance that can be used for making mashes and balls.

**PITCH.**—Plaster for sand-crack consists of 1 pound of pitch and an ounce of yellow beeswax melted together.

**NITRATE OF POTASH (NITRE)** is a valuable cooling medicine and a mild diuretic. Should enter into composition of every fever ball. Dose is from 2 to 4 drachms.

**POULTICES.**—Linseed meal forms the best general poultice. It longest retains the moisture.

**SEDATIVES** are medicines that subdue irritation, repress spasmodic action, or deaden pain. Digitalis, hellebore, opium, turpentine, are medicines of this kind.

**SULPHUR.**—An excellent alterative, combined usually with antimony and nitre, and particularly for mange, surfeit, grease, hide-bound, or want of condition; and it is a useful ingredient in the cough and fever ball.

**TAR**, melted with an equal quantity of grease, forms a good stopping of the farrier. But its principal virtue seems to consist in preventing the penetration of dirt and water to the wounded part; used with the usual cough medicine, in doses of 2 or 3 drachms for chronic cough.

**TURPENTINE** is one of the best diuretics, in doses of half an ounce, and made into a ball with linseed meal and powdered ginger. The oil of turpentine is an excellent anti-spasmodic. For the removal of colic it is unrivalled.

**ZINC (CALAMINE POWDER).**—Five parts of lard and one of resin are melted together, and when these begin to get cool, two parts of the calamine, reduced to an impalpable powder, are stirred in. If the wound is not healthy, a small quantity of common turpentine may be added. This salve justly deserves the name which it has gained—"The Healing Ointment." The calamine is sometimes sprinkled with advantage on cracked heels and superficial sores.

## RECEIPTS.

**DROPS TO MAKE OLD HORSES YOUNG.**—Take the tr. of asafoetida 1 oz.; tr. of cantharides, 1 oz.; oil of cloves, 1 oz.; oil of cinnamon, 1 oz.; antimony, 2 oz.; fennugreek, one oz.; fourth proof brandy, half gallon. Let it stand ten or twelve days, and give ten drops in a pail of water—or one gallon.

**WONDERFUL LINIMENT.**—Two ounces oil of spike, 2 do. origanum, 2 do. hemlock, 2 do. wormwood, 4 do. sweet oil, 2 do. spts. ammonia, 2 do. gum camphor, 2 do. spts. turpentine, and one quart of proof spirits, 95 per cent. Mix well together, and bottle tight.

For sprains, bruises, lameness, &c., &c., the above liniment cannot be equalled, and is actually worth \$100 to any person keeping valuable horses. Omit the turpentine, and you have the best liniment ever made for human ails, such as rheumatism, sprains, &c. Whenever an outward application is required, try it, and prove its virtues. It acts like magic.

**RHEUMATIC LINIMENT.**—Take alcohol,  $\frac{1}{2}$  pint.; oil of origanum,  $\frac{1}{2}$  oz.; cayenne,  $\frac{1}{2}$  oz.; gum myrrh,  $\frac{1}{2}$  oz.; 1 tea-spoonful of lobelia, and let it stand one day; then bathe the part affected.

**RELIEF LINIMENT.**—Take  $\frac{1}{2}$  pint linseed oil, add  $\frac{1}{2}$  pint spts. turpentine, 1 oz. origanum, and 1 oz. oil of vitriol; an excellent liniment for rheumatism, sprains, bruises, &c. Try and prove it.

**CHLORFORM LINIMENT.**—For relieving suffering in case of burns, &c. Mix chloroform and cod-liver oil.

**SOAP LINIMENT.**—Take 1 oz. origanum, 1 oz. Castile soap, 1 pint alcohol. For swellings, &c.

**GENERAL LINIMENT.**—Turpentine, one half-pint; linseed oil, one half-pint; aqua-monia, 4 oz.; tr. of iodine, 1. Shake it all well. This is used for different things spoken of in the different receipts, sores or swellings, sprains, &c.

**BLACK LINIMENT.**—This is good to apply on poll-evil—fistula. Take of linseed oil,  $\frac{1}{2}$  pint; tr. of iodine, 3 oz.; turpentine, 4 oz.; oil of origanum, 1 oz. Shake all well, and apply it every day. Rub it in well with your hand. Wash the part clean with soap and water before applying it. Good on any swelling.

**JOHNSON'S LINIMENT.**—Take oil of origanum, 1 oz.; alcohol,  $\frac{1}{2}$  pint; oil of cedar,  $\frac{1}{2}$  oz.; oil of cloves,  $\frac{1}{2}$  oz.; turpentine,  $\frac{1}{2}$  oz.; olive oil, 8 ounces. Shake well. Used for almost all complaints of the muscles.

**OPODELDOC.**—Take alcohol, half a gallon; 2 pounds of Castile Soap, 4 oz. gum camphor, 2 oz. oil of amber; place alcohol into a pot in hot water, shave up the soap, keep hot until all dissolves, and you have the old original opodeldoc.

**GREEN OINTMENT.**—Take 6 lbs. lard, put into 10-gallon kettle, add 2 gallons water, cut jimson-weeds and fill them in and cook four to six hours, slow, and cook all the water out, then put into jars. Add to each pound of ointment 1 ounce of turpentine. A good and cheap stable ointment—good for galls, cuts, scratches, &c.

**SLOAN'S OINTMENT.**—Take mutton tallow, 4 lbs.; beeswax, one half-pound; resin, one half-pound; turpentine, 3 oz. Melt over a slow fire, and, when partly cold, add the turpentine, and you have the same ointment Sloan sells to cure everything; try it, and prove its value.

**IODINE OINTMENT.**—Get 1 oz. of the grease iodine, 1 pint of alcohol. Let this stand in the sun two days, and this is the tincture of iodine. Take 2 oz. of tincture and  $\frac{1}{2}$  pint of lard, mix well, and you have the iodine ointment. This is used wherever the receipts refer to the ointment.

**WHITE OINTMENT.**—For rheumatism, sprains, burns, swellings, bruises, or any inflammation on man or beast, chapped hands or lips, black eyes, or any kind of bruise. Take fresh butter, 2 lbs.; tr. of iodine, half ounce; oil of origanum, 2 oz. Mix this well for fifteen minutes, and it is fit for use. Apply it every night. Rub it in well with your hand. If for human flesh, lay on warm flannel.

**BLUE OINTMENT.**—Take the ointment of resin, 4 oz.; half oz. of finely-ground verdigris, 2 oz. turpentine, 2 lbs. mutton tallow, half oz. oil of origanum, half oz. tr. of iodine. Mix all well. This is one of the best medicines that can be made for scratches, hoof-evil, cuts, and is good to apply on fistula after the rowels have been taken out.

**HOOF OINTMENT.**—Take resin, 4 oz.; beeswax, 6 oz.; lard, 2 lbs. Melt together. Pour it into a pot, and 3 oz. of turpentine, 2 oz. of finely powdered verdigris, 1 lb. tallow. Stir until it gets cool. One of the best medicines for the hoof, good for corks or bruises of the feet.

**HOOF LIQUID.**—For tender feet, hoof-bound, &c. Linseed or neatsfoot oil, half a pint of either; turpentine, 4 oz.; oil of tar, 6 oz.; origanum, 3 oz. Shake this well and apply it as the directions for the ointment. This is the best, if the horse has been lame long; it penetrates the hoof sooner than the ointment. Both of them should be applied at night.

**HOOF-EVIL OR THRUSH, GREASE HEELS.**—Bleed, and physic, and poultice the foot with boiled turnips and some fine-ground charcoal. This must be done at night, for two or three nights; then wash the foot clean with Castile soap and soft water, and apply the blue ointment every day. Keep the horse on a floor, and he will be well in twelve days.

**HOOF-BOUND, OR TENDER FEET.**—Never have the feet spread at the heels nor rasped above the nail holes, for it will do the foot an injury. Follow the directions given here. Use either the hoof ointment or the hoof liquid. Apply it according to directions. For hoof-bound or tender feet, apply it all around the top of the hoof down one inch every third day. If for split hoof apply it every day. First, have a stiff shoe on the foot and cleanse the cut or crack. Never cut or burn for it.

**HOOF AIL.**—Apply blue vitriol, and put on a tarred rag to keep out the dirt.

No. 2. Wash well with warm soap-suds, wipe dry with a cloth; then take 2 spoonfuls of common table salt, 2 spoonfuls of copperas, pulverize; 4 spoonfuls of soft soap. Mix well. Spread upon a thick cloth, apply to the foot, then confine it with a bandage. Let it remain 12 hours, then wash as before.

**HOOF-BOUND.**—Pare the heel of the hoof till it is as flat and natural as a colt's, then take equal parts pitch pine and butter simmered together and anoint the heel.

**HEAVES.**—Take 1 lb. of resin, 1 lb. of salpêtre, 8 oz. alum, 1 oz. of asafoetida, 4 oz. of sulphur. Pulverize and mix. Give one tea-spoonful once a day in his feed. This is also a good medicine for putting a horse in condition.

**PREPARATION FOR GELDING HORSES.**—Take 2 oz. corrosive sublimate, 1 oz. gum kino, 1 oz. red precipitate.

**SPRAIN IN THE STIFLE.**—Symptoms—The horse holds up his foot, moans when moved, swells in the stiffl. This is what is called stiffling. There is no such thing as this joint getting out of place. Cure—Bleed 2 gallons foment the stiffl with hot water, rub it dry, then bathe it well with the general liniment every morning and night. Give him a mash and he will be well. Never allow any stiffl-shoe or cord on the foot or leg.

**HOW TO CURE CORNS.**—Take off the shoe, cut out the corns, and drop in a few drops of muriatic acid, then make the shoes so as they will not bear on the part affected. Apply the hoof liquid to the hoof to remove the fever. This is a sure treatment. We never knew it to fail.

**CORNS.**—Take the shoe off and give the horse a free run at grass for a few weeks. This will frequently cure.

**FOUNDER IN THE FIRST STAGES.**—Bleed from the neck-vein 2 or 3 gallons or until he falls, then give the following: Half oz. of aloes, 4 drachms of gamboge, half oz. oil of sassafras. Make this into a pill, give it, and give him all the sassafras tea he will drink; turn up his feet, and fill them full of boiling hot lard; bathe his legs in hot water, and rub them well. This will never fail to cure in 48 hours.

No. 2. Physic and poultice the feet.

No. 3. Mix 1 pint of sunflower seed in his food.

**SPAVIN OR RING-BONE.**—Take 1 pint spts. turpentine, 1 pint of oil spike, 4 oz. saltpetre, 4 oz. of alum, 2 oz. oil of vitriol. Bathe the part affected thoroughly every other day for one week, and if this does not effect a cure continue it longer. This has cured spavins of nine years' standing. This receipt has been used with great success.

**SPAVIN AND RING-BONE MEDICINE.**—Take of cantharides, 2 oz.; mercurial ointment, 4 oz.; tr. of iodine, 3 oz.; turpentine, 4 oz.; corrosive sublimate, 3 drachms. Mix all well with 2 lbs. of lard. Color it if you like. Follow the directions here given.

If for ring-bone or bone-spavin, cut off the hair from the part affected, and merely grease the lump with the ointment. Rub it well with the naked hand. In two days grease the part with lard, and in four days wash it off with soap and water, and apply the ointment again. So repeat it every four days. If for wind-galls, or bog-spavin, or curb, apply the ointment every six days. This recipe has been sold for \$300.

**SPAVIN.**—Camphor dissolved in spirits of turpentine, applied until the hair starts.

No. 2. Oil vitriol, organum, cedar oil, Spanish flies, equal parts; 3 oz. turpentine.

**TO CURE RING-BONE WHEN FIRST COMING.**—Dissolve  $\frac{1}{2}$  pound of saltpetre in 1 quart soft water, and wash with it twice a day. This will stop the growth and lameness, and not remove the hair.

**RING-BONE.**—Take of spts. turpentine, oil of spike, of each 1 oz.; bottle and mix well; then add 1 oz. of oil vitriol. Bathe the diseased part well for three days, and drive it in by the application of a hot iron; then suspend it for three days, to prevent the part becoming too sore, then apply the remedy again. The sore should be treated with lard or ointment. This will cure the disease if not of too long standing.

**POLL-EVIL.**—Cure before it breaks. Run a towel or seton from the lower part of the swelling to the top, through the centre of the enlargement, then make the following lotion: Take of salamoniac, 2 oz.; and turpentine spirits, half pint; 4 oz. linseed oil, and 4 oz. spts. tar. Shake all well, and apply it all over the swelling every other day. Let the seton stay in until all the swelling is gone down; move it every day, and when all is gone draw it out. Bleed when you first open it. Keep the part clean.

**POLL EVIL AFTER IT BREAKS.**—If you find by probing it that the pipes run down towards the surface, run down a seton through the bottom of the pipe, and anoint it with the following ointment: Take of mercurial ointment, 4 oz.; and of cantharides, half an ounce. Anoint the seton every day until it runs a bloody matter, then draw it out, if the pipes run down to the centre of the shoulders; then run down a piece of the nitre of silver to the bottom, and use the liquid in the next following receipt. Apply on the sore every day. Keep the part clean with soap and water.

**LIQUID FOR POLL EVIL.**—Take olive oil, 6 ounces; turpentine, half oz., oil of organum, half oz.; American or seneka oil, 3 oz. Mix well, and apply to the part affected, after the nitre of silver has been used. Apply this every few days until it heals up. The cleaner you keep the part the better.





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tirely through the surface skin. It thus permeates into the part or parts imme-  
diately and locally affected, and thus never fails to

**Give Relief at Once, in Cases, too, where Delay is  
Dangerous.**

DR. BACKMON'S CELEBRATED HORSE SALVE owes nothing of its  
great success to paid-for puffs. It has won all its honors by its actual use. There  
are other very fair salves in the market—good occasionally for “this or that”  
complaint. But they are generally made up by Druggists who are only accus-  
tomed to compounding salves for human beings, and who have no knowledge of  
the anatomy, nature and habits of the horse. The most successful literary man  
of the day, and the greatest railroad owner—both having stables of the swiftest  
racers—invariably keep a supply on hand, and they have never known a better  
article—a QUICKER OR SURE CURE ALL for the diseases above enumerated.

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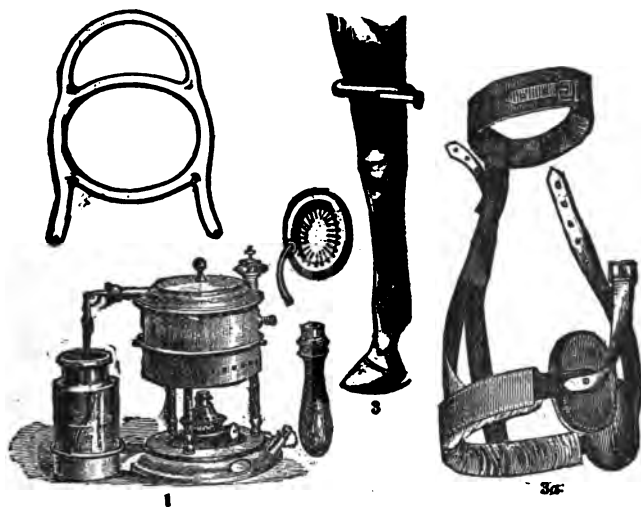


# Catalogue of Veterinary Instruments

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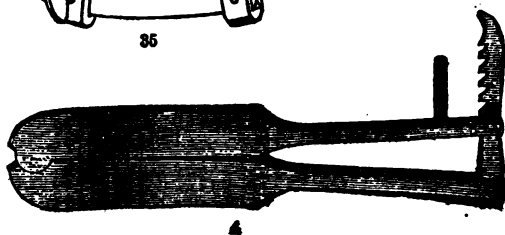
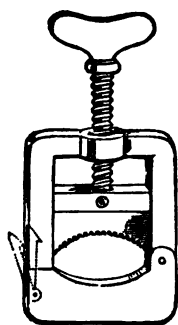
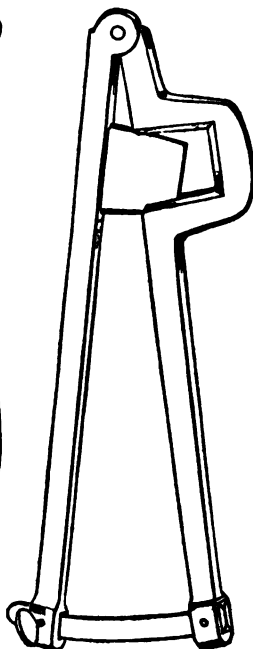
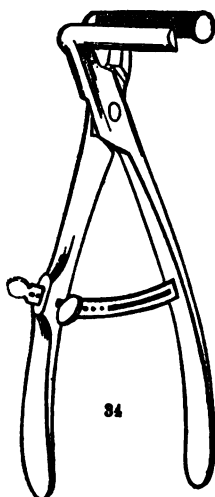
**J. H. TUTTLE.**

**78 Nassau Street, New York City, N. Y.**



<b>Aneurism Needle,</b>	\$	1	50
<b>Antiseptic Atomiser.</b> (Fig. 1).		15	00
<b>Apparatus for singeing with alcohol, without pipe,</b>		5	00
with pipe,		7	00
<b>Arm Protector, Rubber,</b>		8	00
<b>Artery Forceps,</b> (Fig. 39 and 40, page 9).		2	50
<b>Articulated Fole Hooks, blunt and sharp,</b>		4	00
each,			
<b>Balling Guns, brass,</b>		8	00
do. Goodwin's with soft end for Protection of Gums,		9	00
<b>Balling Irons,</b> for introducing balls with the hand. (Fig. 2).		2	00
<b>*Bandages, Derby,</b>		4	00
four \$1.00 . . . 4 dozen,		10	00

Bistoury cachée (Fig. 60), 10 inch., \$8.00; 18 inch., heavy.....	\$12 00
do. two bladed,.....	8 00
Bistouries, curved and straight, sharp and probe-pointed,..each,	1 50
<b>Blackwell's Apparatus</b> , for horses' legs, producing numerous and constant streams of hot or cold water, to be attached to a hydrant, or pump, or made to supply itself upon the syphon principle, made of India Rubber, improved, (Fig. 3),..	8 00
Bone Forceps, for breaking out pieces of decayed bone. (Fig. 58, page 18) \$3.00....extra large.....	5 00
Blood Sticks, hard wood.....	50
do. filled with lead.....	2 50
<b>Bog Spavin Truss</b> , Prof. Going's. (Fig. 3a).....	7 00
Budding Iron,.....	1 50
Bullet Forceps, .....	2 75
<b>*Caponizing Instruments</b> , Farmer Miles, consisting of Knife, Section Spreader and Ovary Forceps; in neat case, with full directions. ....\$7.00; extra knife, fine,	
Casting Hobbles, see Hobbles.	10 00
<b>Carbolized Catgut Ligature</b> , (thick).....per bottle,	0 75
<b>Castrating Clamps</b> , with slide on handle, (Similar to Fig. 4),	6 50
do. with spring regulating rack. (Fig. 4), .....	6 50
do. French, with ratchet in handle, (Fig. 32),.....	10 00
do. with screw for closing caustic clams,.....	4 00
do. with regulating rack for caustic clams,.....	4 75
do. Mink's.....	7 00
do. McKenzie's .....	8 00
do. House's latest, (Fig. 33).....	10 00
do. William's, (Fig. 34).....	7 50
Castrating Ecrasseurs, see Ecrasseurs.	
<b>Castrating Torsion Forceps</b> , William's. (Fig. 35),.....	6 00
<b>Castrating Knife</b> ,.....	2 00
<b>Catheters</b> , Elastic, for Horses, common, \$1.50; best, with coiled wire inside,.....	3 00
do. for Horses. with stilet whalebone, best,.....	5 00
do. cane,.....	2 75
do. for Mares,.....	1 25
do. soft metal, for Mares,.....	2 50
<b>Cattle Trocars</b> ,.....	4 00



<b>Cantery Irons, 9 patterns, plain, not polished, in handles, each</b>	<b>\$1 50</b>
do. do. polished, without handles, 9 patterns, (Fig. 5)	
each,.....	1 50
Ebony handle with fastening screw, for latter,	2 00
do. do. for pyropuncture,.....	3 50
do. do. with three changeable iron points.....	3 50
do. do. with platinum point.....	4 00
do. Iron Forge, (Fig. 6).....	7 50
do. Lamp, self-blowing, (Fig. 7).....	7 50
Chain Saw, (Fig. 86).....	10 00
Chain Saw, extra heavy and strong, veterinarian's special, dental	12 50
do. do. Carrier,.....	3 50
<b>Clinical Thermometers, see Thermometers.</b>	
<b>Clippers, illustrations page 6.</b>	

*Directions for use.* Currycomb and clean the horse well as done ordinarily before clipping; oil the teeth and comb well and work the clipper against the direction of the hair.

Always keep the teeth and joint well oiled and see that the wrench, which prevents the screw from turning back, is well tightened.

Clark's, (Fig. 8).....	5 00
Phipp's and Burman's, self sharpening, (Fig. 57).....	7 50

Extra parts for the above.

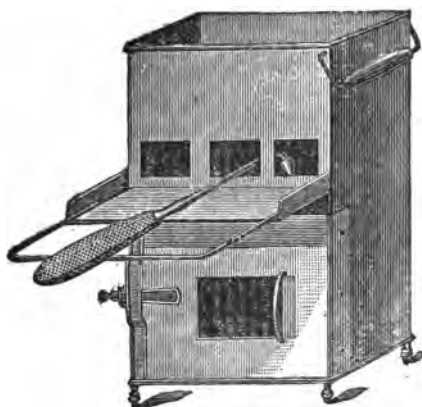
Reversible plates, per pair,.....	\$ 5 00
Upper handles, (left).....	1 50
Lower " (right).....	1 15
Arched Springs.....	50
Bolt and thumb-nut.....	60

The double set of teeth, the self-sharpening, the reversible plates, the arched spring pressing the plates together firmly and evenly, and the duplication of broken parts, are features which are found in no other clipper, and which, joined to the other admirable qualities of this clipper, render it the best in the market.

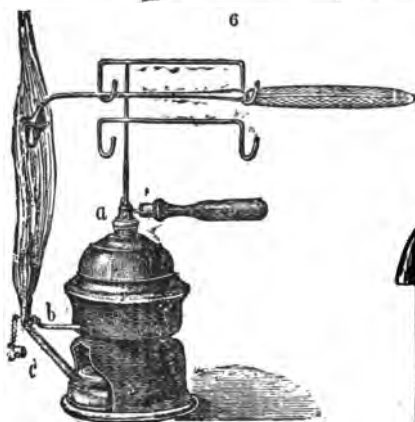
*One hand, (Fig. 86).....	5 00
*Clipper, No. 1 Power Clipper, }	
* do. No. 2 Power Clipper, }	75 00
* do. No. 3 Power Clipper, }	50 00
* do. No. 4 Power Clipper, }	35 00
	50 00

Further information given about Power Clippers on demand.

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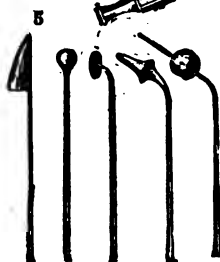
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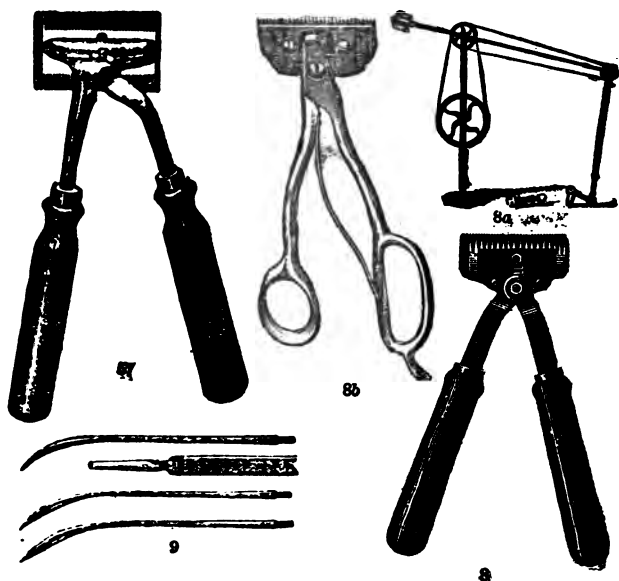
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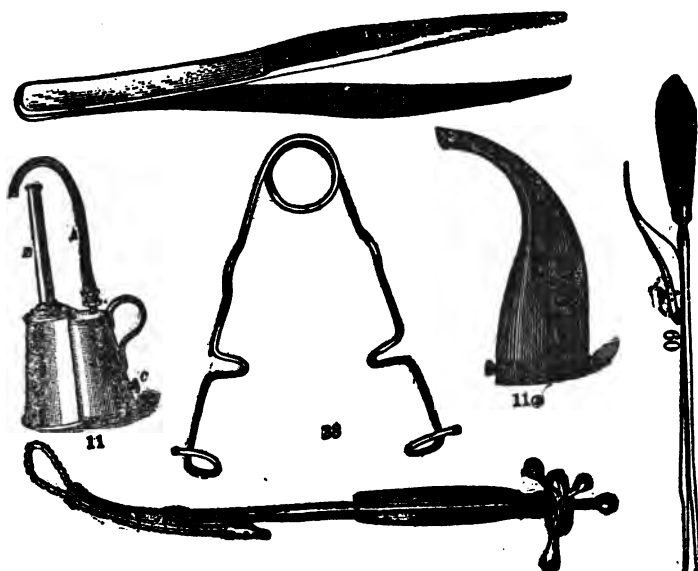
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8



Clipping Combs, horn, 60c.; steel, \$1.50; German silver,.....	\$1 25
Clipping Shears,.....	\$1 25 and 1 50
Coecum Trocars,.....	3 00
Comb for Manes,.....	75
Copeman's Needles, 3 in one handle. (Fig. 9).....	3 00
Crotchets,.....	3 00
Dental forceps, saws and files, see 'Tooth.'	
Delafield's graduated Lancet and grooved Spatula, for Inoculating Cattle, in case,.....	7 50
Directors,.....	75
Dissecting Case, contains: 3 Ebony Scalpels; Scissors; Forceps; Blowpipe; Set Chain Hooks, Tenaculum. Mahogany Case,..	5 50



12

- Dissecting Case, contains : 4 Scalpels, Scissors, Forceps, Saw, Cartilage Knife, Blow pipe, Needle and Silk.....** \$12 00
- Dissecting Forceps, (Fig. 10).....** 1 00
- Docking Shears,.....** 8 00
- Drenching Horn, tin, Patent, (Fig. 11a).....** 1 00
- Drenching Horn, J. R. & Co's. (Fig. 11). This has been devised with a view to obviate all difficulty in administering fluid medicine to horses and cattle. It consists of two compartments, A and B; B communicating with the metal tube B, and A with the soft rubber hose A. The vessel B is to hold the medicated fluid and A luke warm water which may be filled in through C. The soft rubber hose A is introduced into one of the nostrils, and the metal tube B into the mouth; the horn is then to be tilted upwards, when the water will enter the nostril, force the animal to swallow and take the medicine without difficulty. Price.....** 2 00

<b>Morassours, Maisonneuve's curved (Fig. 12), \$20.00; extra heavy.....</b>	<b>\$24 00</b>
do. Maisonneuve's extra fine, straight and curved attachment, with two chains and four strengths of wire rope.....	36 00
do. Chassaignac's, large curved, castrating (Fig. 13)	27 00
do. do. small, for polypus, and castrating small animals,.....	20 00
do. Farmer Miles', (Fig. 14).....	20 00
do. Wire.....small \$6.00; very long,	10 00
do. Improved with regulating wheel and ratchet,..	18 00
<b>Elastic Catheters, see Catheters.</b>	
<b>Exploring Trocar. (Fig. 37).....</b>	<b>1 50</b>
do. do. with exhausting bulb,.....	2 00
<b>Eye Speculum. (Fig. 38).....</b>	<b>1 50</b>
do. with Set screw,.....	4 00
<b>Fleams, plain.....1 bladed, \$1.25; 2 bl., \$1.50, 3 bl.</b>	<b>1 75</b>
do. extra fine, ..nickelplated, 1 bl., \$2.00, 2 bl., \$2.50, 3 bl.	3 00
<b>See also "Knives."</b>	
<b>Floats, see "Tooth Rasps."</b>	
<b>Fole Hooks, plain, { blunt and sharp, 9 inch. long, each, }</b>	<b>3 00</b>
do. articulated, {	4 00
<b>Foot Forceps, for testing strength, McCluer's,.....</b>	<b>7 00</b>
<b>Forceps, artery. (Fig. 39 and 40).....</b>	<b>2 50</b>
<b>Forceps, Torsion. (Fig. 44).....</b>	<b>3 00</b>
do. Dressing. (Fig. 41).....	\$2.50 and 3 00
do. Dissecting. (Fig. 10).....	1 00
do. Polypus. (Fig. 41).....	\$2.00 and 3 25
do. Castrating, Williams'. (Fig. 35).....	6 00
do. Bullet,.....	2 75
do. Dental for Wolf-teeth, 9 inches.....	3 50
do. do. 15 inches,.....larger,	5 50
do. do. small 7 1-2 inches,.....	1 75
<b>Gum Lancet, .....</b>	<b>1 50</b>
<b>Herniatome, .....</b>	<b>12 00</b>
<b>Hobbles, .....</b>	<b>25 00</b>

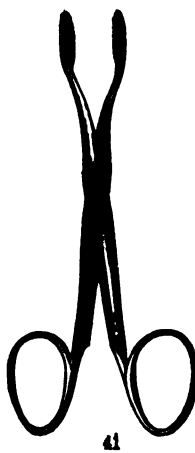
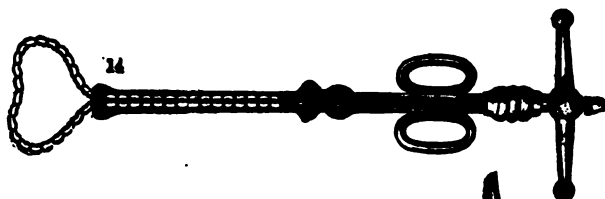
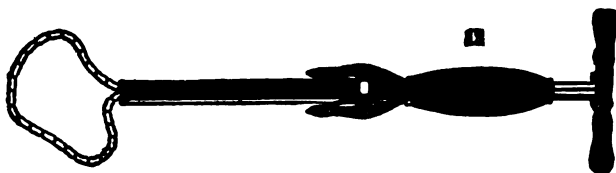
Our Hobbles are of the latest and most practical style; by the withdrawal of a small bolt, they drop off and the horse is instantly released.

Horse Catheters, see Catheters.



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*Jason H. Tuttle's*

<b>Hypodermic Syringes.</b> (Fig. 15).....	\$5 00
<b>Hysterotome</b> (Fig. 60), 10 inches, \$8.00; 18 inches.....	12 00
<b>Injecting Pump</b> , Reed's in case, best.....	25 00
<b>Inoculating Needle</b> ,.....	2 25
<b>Knives</b> , (see also Bistouries and Scalpels),	
Drawing, or Hoof, Semi-circular, "Farrier's," U. S. A. \$1 and.....	1 25
do.     Various other shapes, sharp pointed and bent over in stiff handles,.....\$1.50	1 75
do.     closing in handle, for pocket.....	1 50
Set of two different sized curved and one sharp pointed double edged Drawing Knives, fitting in one spring handle, .....	6 00
Set of 12 Hoof Knives, fitting in one handle, in leather case	18 00
Sage, various patterns.....\$1.50	1 75
Embryotomy, in hard rubber handle, with concealed slid- ing spring blade (Fig. 42).....	3 50
Embryotomy, with ring for holding on finger (Fig. 43)...	1 75
Castrating.....	2 00
*Farmer Miles', 4 bladed, Castrating.....	7 00
Manifold combination Instrument, containing: 2 fleams, 1 drawing-knife, 1 bistoury and 1 probe.....	3 00
Nerving set of three, two with upward and lateral blunt projection right and left and probe-pointed curved knife, each, .....	2 00
Nerving, Fleming's, with eye near point (Fig. 45).....	2 00
Periostotomy Knife,.....	1 50
Pricking, spring back, ..1 bladed, \$2.25, 2 bladed, \$3.00, 3 bladed,.....	3 75
Nicking,.....	1 75
Lactometer, .....	1 00
Lamp for illuminating mouth, nasal, rectal and vaginal cavities (Fig. 53),.....\$7.00; in case	9 00
See also Student's Lamp.	
Lancets (Fig. 46).....	75
Leg Spreader for Castrating, Farmer Miles', .....	
Mare Combs,.....	75
Marine Lint, the best anti-septic, expressly prepared for sur- gical purposes, .....	per lb. 75
*Medicine case. (Fig. 16).....	17 00
Various styles, from \$5.00 to \$28.00.	
Milk Tubes,.....each,	1 50
Mouth Speculum, with screw, Varnell's, (Fig. 17).....	12 00
Nasal Irrigator, tin, .....	2 50

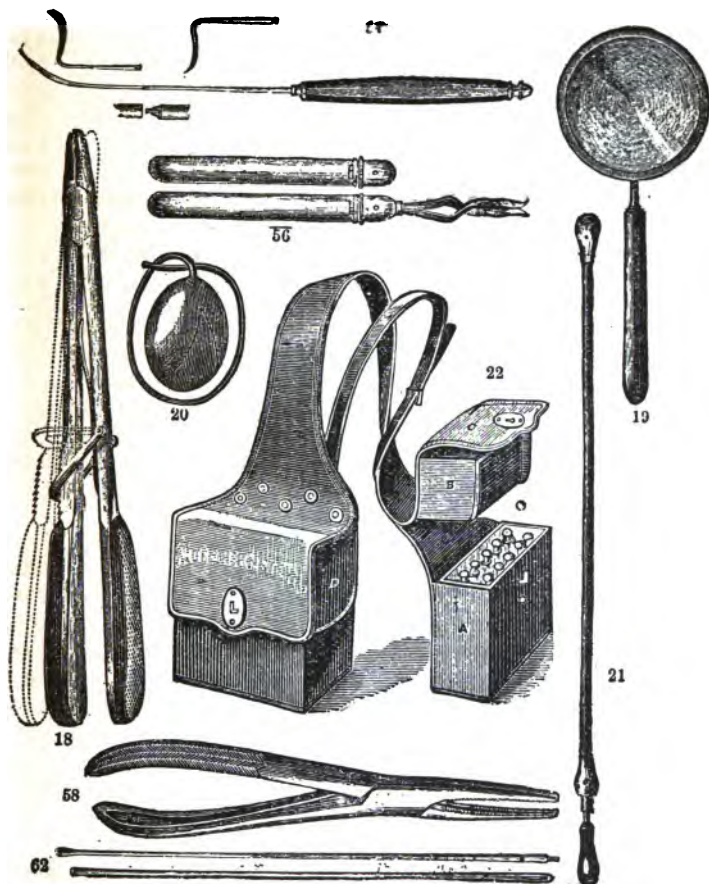
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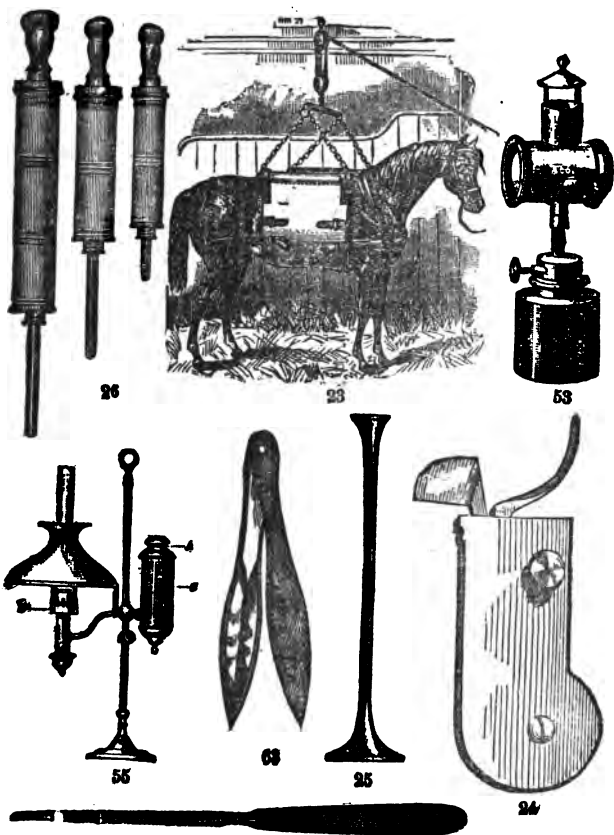


<b>Needles, straight, half curved and full curved, each 15c.; per</b>	
do. ....	\$1 50
do. into which soft wire is to be screwed,.....each,	50
Soft lead wire for same, per coil,.....85c. and	45
<b>Needles, Copeman's, 3 to screw on one handle. (Fig. 9)....</b>	3 00
do. new set of three (Fig. 54) .....	3 00
<b>Needle Holder, slide fastening,.....</b>	3 50
do and Wire Nipper,.....	3 50
<b>Needle Holder, Russian. (Fig. 18).....</b>	4 00
<b>Nose Elevator, .....</b>	1 00
<b>Nose Speculum, .....</b>	3 75
<b>Ophthalmoscopes. (Fig. 19) ...</b>	\$3.50 and 4 50
do. to fasten on head to have hands free, accord-	
ing to size,.....	\$6.00 to 9 56
<b>Palet Lancet, with slide catch.....</b>	3 00
<b>Parturition Instruments: Repulsor</b>	} 5 in all, each 30 in. long,
Sling-Carrier, straight and curved,.....	
Sharp and Blunt Hook,.....	
<b>Parturition Set, consisting of repeller with two lateral articu-</b>	
<b>lated prongs on one end; convenient handle on the other, in</b>	
<b>one piece, 39 inches long; and a blunt and sharp hook screw-</b>	
<b>ing on one handle, each 36 inches long when screwed together,</b>	22 00
<b>Periototomy Set, Spooner's, containing: 1 curved blunt pointed</b>	
<b>Seaton Needle, one small probe-pointed convex Bistoury; 1</b>	
<b>large probe-pointed concave Bistoury; 1 double-edged knife</b>	
<b>and 8 needles,.....</b>	10 00
<b>Pessary, inflating, for mares and cows. (Fig. 20).....</b>	6 00
<b>Planes, Charlier's, for shoeing a la Periplantaire,...</b>	3 50
<b>Polypus Forceps. (Fig. 41).....</b>	\$3.00 and 3 25
<b>Porte Mèche,.....</b>	50
<b>Porte Caustic, ordinary, all hard rubber, 75c; h. r. and silver,..</b>	1 25
<b>Porte Caustic, new, self-holding, incorrodible platinum and</b>	
<b>aluminum. (Fig. 56).....</b>	8 50
<b>Post Mortem Case, Liautard's, .....</b>	15 00
<b>Post Mortem Set, containing: Saw, Strong Knife, Cartilage</b>	
<b>Knife, Chisel, Scalpels, 2 Scissors, Hooks, Forceps, Blowpipe,</b>	
<b>and Needles, in strong case. (See also "Dissecting Cases.")..</b>	25 00
<b>Probangs,.....of cane, \$4.50, Whalebone,</b>	9 00
do covered with leather, for cattle, with cane stilet.	
(Fig. 21).....	16 00
<b>Probes, long, plated, in two parts to screw together (Fig. 63),...</b>	1 25
do. long,.....whalebone, 75c; lead	50

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<b>Reed's Injecting Pump</b> , in case, best. ....	\$25 00
<b>Rowling Scissors</b> , .....	2 00
<b>*Saddle Bags</b> . Improved Physician's. (Fig. 22.) Made of the black bridle leather, 20 ground stoppered vials, .....	12 00
do. 24 ground stoppered vials. ....	13 00
This bag is entirely rivetted, and the boxes containing the bottles are made of tin. It also has a watershed protecting the whole contents from rain.	
<b>Saws, Bone</b> .....	5 00
do. For separating horse's teeth. (Fig. 47). ....	1 50
<b>J. C. Myer's Saw</b> , with screw, fastening on a handle of usual length, as also on a rod 30 inches long, for separating the bones of the pelvis in cases of dystocia dependent upon pos- terior presentation .....	3 50
<b>Scalpels</b> , two-bladed .....	3 00
<b>Scissors</b> .....straight, \$1.25, curved, .....	1 75
<b>Seaton Needles</b> , plain 6, 9, and 12 inches. ....75c., \$1.00 and ..	1 25
do. blunt, probe-points.....\$1.00 and ..	1 50
do. in protecting horn handle, (Fig. 63). ....	1 75
do. 2 and 3 parts to screw together. ..\$2.75 and ..	3 50
do. Frog, S form, in two parts. ....	2 75
do. Frog, semi-circular, 6 inches. ....	2 50
do. Dog, plain.....	1 50
do. Hock .....	3 75
<b>Serrefine's steel</b> .....	75
<b>*Student's Lamp</b> , best (Fig. 55). ....\$5.00; nickel-plated, ..	6 00
<b>*Suspending Slings</b> , for small and medium horses. (Fig. 23) ..	18 00
do. for any size horse.....	20 00
Without pulleys and ropes, which can be had to suit at any hardware store. We can supply the same for.....	9 00
<b>Silk</b> , ordinary, per skein.....	10
do. one size on card.....	35
do. four sizes on card.....	75
do. heavy in rolls.....	35
<b>Spring Lancets</b> , in case, plain. (Fig. 24). ....	2 50
do. guarded, in case .....	3 00
<b>Standards</b> , plain.....	7 00
<b>Standards and walking cane combined</b> .....\$12.00 and ..	14 00



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<b>Stethoscopes, plain.</b> (Fig. 25).....	\$1 50
do. In two parts screwing together .....	2 00
<b>Stomach Tubes, elastic</b> .....	7 50
<b>Suture Pins</b> .....per dozen,	50
<b>Syringes, White metal.</b> (Fig. 26.) In box, 24 oz. \$3.00,	
86 oz. \$4.00, 48 oz.....	5 00
do. Hard Rubber, in box, 24 oz.....	7 50
do. Fine Brass, in box, 24 oz.....	12 50
<b>Taxidermists' Cases</b> .....	\$4.00 and 11 50
<b>Thermometers, Fever, plain, in cases</b> (Fig. 27).....	2 50
do. self-registering, in case. (Fig. 28). 4 in.,	
\$3.00, 6 in.....	3 50

We have lately made arrangements by which we can supply with any thermometer (of our or other manufacture) a certificate stating its diversions, if any, from the correct scale. The test, that preparatory to this the thermometers are subjected to, is equal to the most careful and reliable that can be made. Thermometers with a certificate from us are preferable to any "warranted" or "tested," as such bone fide statements cannot be as desirable as a true statement of diversions. The price of the certificate is \$1.00. Thermometer Fig. 26 if kept on hand with and without certificate.

<b>Thorouppin Truss, Prof. Goings's</b> .....	\$10 00
<b>Thumb Lancets,</b> (Fig. 46).....	75
<b>Tooth Chisel, Prof. Goings's.</b> (Fig. 29).....	17 50
do. do. French.....	14 00
do. <b>Forceps, for Wolf-teeth, 9 inches</b> .....	3 50
do. do. large 15 inches.....	5 50
do. do. small 7 1-2 inches.....	1 75
do. do. large, with closing screw. (Fig. 59).....	24 00
do. <b>Cutting Forceps, Liautard's, large, hooked so as to</b> prevent slipping.....	26 00

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*do. <b>Rasps, stiff handle, plain</b> .....	1 75
*do. do. guarded, (Fig. 80).....	3 75
*do. do. jointed handles, plain.....	3 00
*do. do. do. guarded.....	3 75
do. do. Adjustable (Fig. 81a), stiff handle .....	3 00
do. do. do. unscrewing (Fig. 81b).....	4 00
do. Extra files for same. (Fig. 81c).....each,	40

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do. File, plain, for front teeth.....	1 00
do. File, in handle, for front teeth.....	3 00
do. Saw, small. (Fig. 47, page 15).....	1 50
do. Saw, bow, 3 blades. (Fig. 48, page 18).....	6 50
<b>Tooth Knife and pick, heavy for teeth, bones and gums. Hurl-</b> <b>burt's.</b> (Fig. 49, page 18).....	2 00
<b>Tooth-cutting Forceps, small, according to size.</b> (Fig. 51, 51a), \$3.00, \$5.00.....	7 50

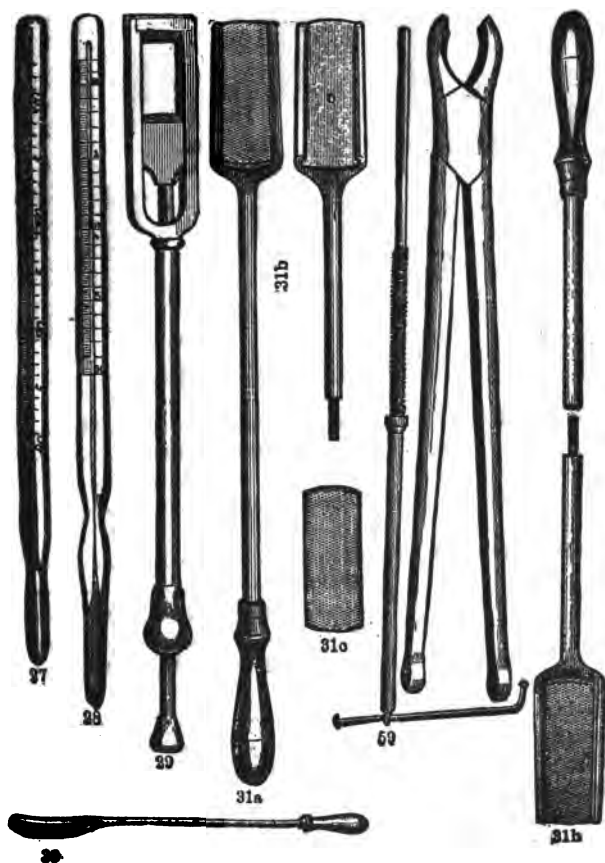
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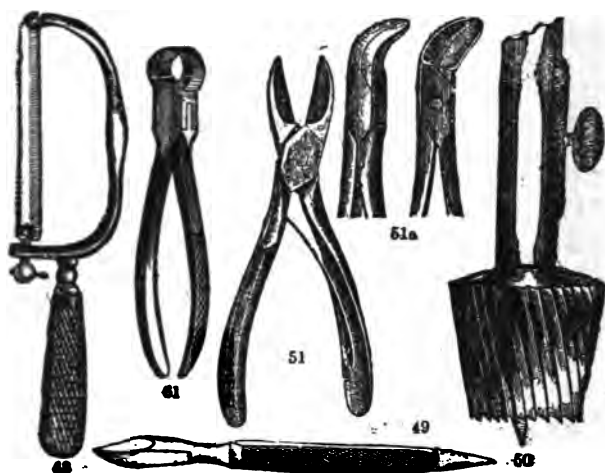
<b>House's Tooth Forceps, bayonet curve</b> .....	4 00
do. do. long and heavy, with sectional handles	24 00
do. do. Cutting Forceps, long and heavy, with sectional handles .....	24 00
<b>House's Cutting Forceps, for lower grinders</b> .....	7 00



*Catalogue of Veterinary Instruments.*

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House's Tooth-Cutting Forceps, for front teeth. (Fig. 61).....	\$7 00
do. do. do. do. for separating teeth.....	7 00
do. Dental Hook .....	2 00
do. Tooth-file for front teeth.....	1 00

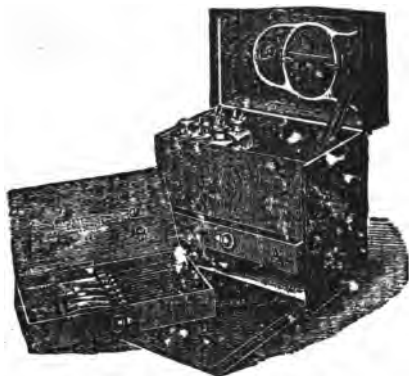
<b>Tracheotomy Tubes, metal, plain.....</b>	<b>4 00</b>
do. hard rubber.....	4 00
do. self-retaining. (Fig. 53 page k).....	6 00
do. Lioutard's.....	15 00

The part A, which is shown separately, is removable to enable introduction.

Trephine, conic. (Fig. 50).....	4 00
Trocar, Coecum. ....	3 00
Trocar, Exploring. (Fig. 37 page i).....	\$1.50 and 2 00
Trocar for Sheep, with three canulas, with side and front holes.....	2 75
do. plain, for sheep, with cap.....	3 50
do. plain, for cattle.....	4 00
do. Hyovetebrotomy .....	8 00
<b>Urinometer .....</b>	<b>2 00</b>

## IMPORTED POCKET-CASES.

<b>Twofold Case, (French,)</b> containing: Scalpel, two-bladed Fleam. Scissors curved on flat, Artery Forceps, Director, Seaton Needle in 2 parts, Lancet, Needles, and Silk.....	\$30 00
<b>Fine Two Flap Solid Frame Case, (French,)</b> containing Sage Knife, two-bladed Fleam, Artery Forceps, Drawing Knife, Lancet, Seaton Needle in 3 parts, Director, Scissors curved on flat, Scalpel, Finger Knife, Needles, Pins and Silk .....	30 00
<b>Twofold Case, (English,)</b> contains: Plain Probe with eye, New Nerving Knife, Lancet, Bounding Scissors, Straight Scissors, Spatula, Exploring Trocar, Curved Bistoury, Castrating Knife, Scalpel, Nicking Knife, Director.....	22 00
<b>Threefold, (English,)</b> containing: 2 Fleams, straight Scissors, Seaton Needle in horn protection, 2 Lancets, Director and Scoop, Spatula, Castrating Knife, Bowing Scissors, Probe-pointed Bistoury, Aneurism Needle and Tenaculum, Dressing Forceps, Scalpel, Drawing Knife, Needles and Silk.....	30 00
<b>Fine Threefold Case, (French,)</b> containing: Castrating Knife, three-bladed Fleam, Scissors curved on flat, Artery Forceps, Director, Scalpel, 2 Drawing Knives, Finger Knife, Dressing Forceps, Porte Caustic, Seaton Needle in three parts, 3 Sage Knives, 2 Lancets, Needles and Silk....	32 00
<b>Extra Fine Threefold Case, (French,)</b> containing: Castrating Knife, three-bladed Fleam, Scissors curved on flat, Artery Forceps, Long shank probe-pointed Bistoury, Trocar, Finger Knife, Seaton Needle closing in handle, Frog Seaton Needle in 2 parts, Seaton Needle in 3 parts, Scalpel, Director, Retractor, Straight Bistoury, Dressing Forceps, Porte Caustic, Tenotomy Knife, Fenaculum, 6 assorted drawing Knives, 3 Lancets, Needles and Silk .....	50 00
<b>Liautard's Hoo: Operating Set, Right Sage Knife, Left Sage Knife, double edge Sage Knife, 2 Drawing Knives of assorted sizes, Searching Knife, Plain Spring Forceps, Scissors curved on flat, Director, Silver Probe; in mahogany box.....</b>	16 00



### LIAUTARD'S MEDICINE CASE.

**Liautard's Medicine Chest and Instrument Case combined.**  
6 Two-oz. Glass stoppered Bottles, 2 Glass Jar for Ointments, Balling Iron, Elastic Catheter.

**In Drawer B.**

Right Sage Knife, Left Sage Knife, double edge Sage Knife, 2 Drawing Knives of assorted sizes, Searching Knife, Plaster Spatula.

**In Drawer A.**

Scalpel, straight edge, slide catch, Scalpel, convex edge, slide catch, 2 Assorted Lancets, Coecum Trocar, Dog Seaton Needle, Plain Artery Forceps, Grooved Seaton Needle in two parts, Scissors curved on flat, Director, Porte Caustic, H. B. Syringe, with extra cone fitting into the canula

of the Oesum Trear. Put up in a strong wood frame case, covered with black russet leather, having a handle on the top of the cover.....\$55 00  
When desired the above case is also furnished without the contents of the drawer A..... 21 00  
Or the same will be filled with such instruments as the purchaser may select.

## J. H. T'S POCKET CASES.

**Twofold Pocket Case**, contains: Scalpel, sharp-pointed Bistoury, Lancet, one-blade Fieam, Tenaculum, straight Scissors, plain Artery Forceps, double-edged Hoof Knife, Seaton Needle, plain Probe to unscrew, in 2 parts, 4 needles, and Silk.....\$15 00

**Threofold Pocket Case**, contains: 3 different Scalpels, 3 different Bistouries, Tenaculum, Lancet, one-blade Fieam, Hoof Knife, single edge, Hoof Knife, double edge, Seaton Needle, to unscrew, 3 parts, Probe, to unscrew, 3 parts, Curved Scissors, Dressing Forceps, plain Artery Forceps, 4 Needles, and Silk.....\$24 00

**Pocket Cases in all varieties made up to order.**

## THE NEW SET OF INSTRUMENTS FOR CLOSING QUARTER CRACKS IN HOOFS.

(From the "Spirit of the Times.")

Our attention has recently been called to an improved method of closing cracks and fissures in the horse's hoof. The drawing will indicate the form of the apparatus, which consists essentially of two parts; an instrument for puncturing the hoof—a powerful pair of forceps for compressing the ends or points of the clamps into the hoof. Punctures on each side of the crack in the wall



of hoof are effected by the cautery at red heat, to a sufficient depth to insure secure hold of the clamp, which by means of the forceps, is first pushed firmly into the punctures made by the cautery, and then the ends of the clamps are carefully compressed by the forceps, using no greater force than the animal will bear without pain. We have used these clamps in a number of cases with complete success.

**FORCEPS**,.....\$6.50

**FIRING IRONS**,..... 2.50

**CLAMPS**, .....per dozen, 0.50

Forceps with which two sizes of clamps can be compressed,..... 12.50

Two Firing Irons for latter,..... 4.50

# AUZOUX'S CLASTIC MODELS.

## RELATING TO VETERINARY ANATOMY,

IMPORTED TO ORDER BY

**JASON H. TUTTLE,**

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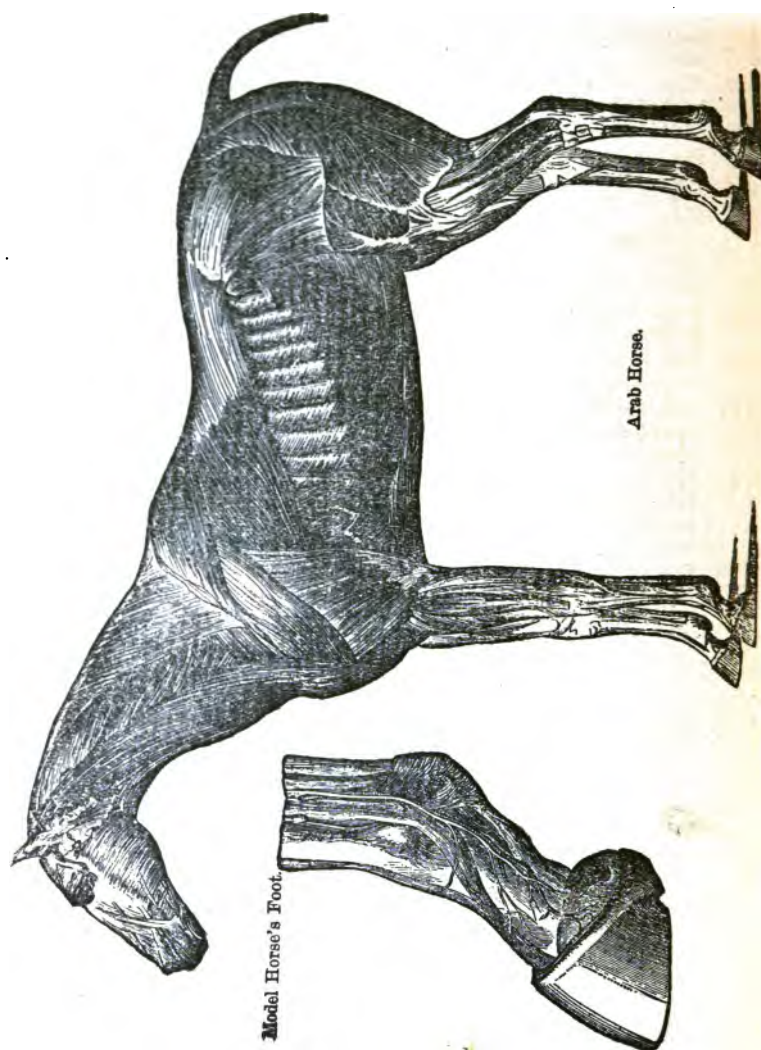
We allow 20 per cent. from the prices below and a deposit to be given with the order amounting to about 80 per cent. of its value.

Clastic anatomy is distinguished from all other substitutes that have hitherto been invented to supply the want of natural preparations.

- 1.—By its extraordinary strength and durability;
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- 4.—By the possibility of furnishing any kind of models;
- 5.—By the possibility of detaching all the parts, one after another, as would be done by the most skillful dissector, and replacing them with the same facility;
- 6.—By the possibility of showing all the details, even the most minute, which enter into the composition of each animal;
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These models are made with a special preparation, which, when newly composed, is run into moulds; during this process it takes on the most delicate impressions, and afterwards, when thoroughly dry, acquires a remarkable degree of lightness and elasticity, combined with a degree of strength equal to that of wood.

84. Arab horse, complete anatomy, exhibiting more than 3,000 details decomposing into 97 pieces; showing on one side the superficial muscles, nerves, and vessels; on the other, the same removable, separately, as in a dissection, from the superficial layer to the skeleton; splanchnic cavities containing their viscera, which also may be removed and studied separately. This new model of the horse has been adopted in French cavalry regiments, and in all the veterinary and agricultural schools. It has also been purchased by several foreign governments as an efficacious means of disseminating anatomical and physiological knowledge, indispensable to the art of horse breeding ..... \$2,100 50  
Stand, spatula, descriptive pamphlet, and case ..... 52 50
85. The same, less complete, showing on one side the muscles, nerves and vessels of the superficial layer; on the other, the middle layer and the organs in their respective cavities, separable as in the complete model ..... 1,050 00  
Stand, spatula, descriptive pamphlet, and case ..... 52 50

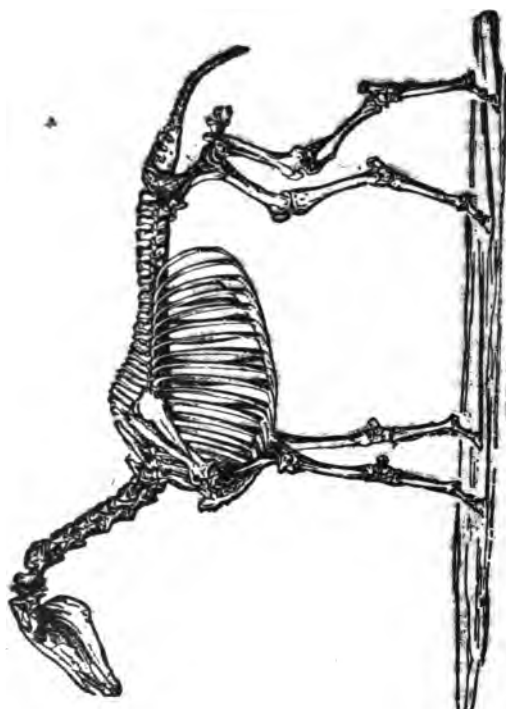


Arab Horse.

Model Horse's Foot.

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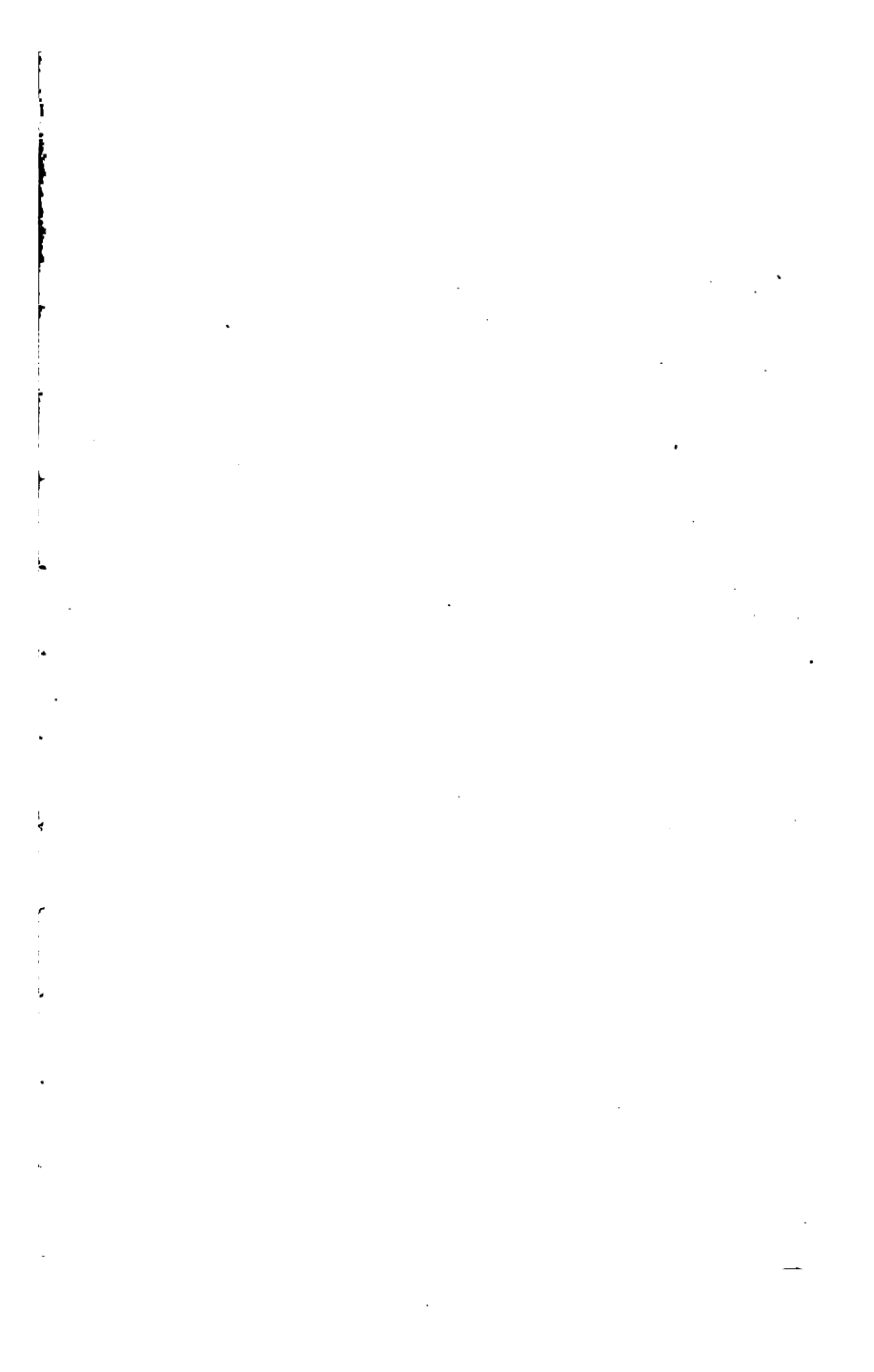
36. Thirty Maxillæ, or jaw bones, displaying correctly the age of the horse at every period of life, with examples of such malformations as may make the horse appear older or younger.....	105 00
37. Plate, displaying in relief the shape and structure of all the teeth of the horse.....	8 00
38. Fourteen maxillæ, or jaws of an ox, displaying correctly its age.....	52 50
39. Swellings of the bones. Leg of sound horse, divested of the skin and amputated 8 inches above the ham, from which different portions of bone may be removed and replaced by diseased specimens. These, to the number of 18, show in various degrees of development, the osseous swellings known as spavin, curb, ringbone, etc.....	52 50
40. Leg of a horse divested of the skin, with swellings of the bones in place.....	26 25
41. The same, covered by the skin, with models of all the various swellings of the bones in place.....	26 25
42. Leg of a horse in a healthy state, covered by the skin.....	26 25
43. Skeleton of the leg of a horse, 12 distinct bones, each separately removable.....	26 25
44. Soft swellings of the leg of a horse; the limb divested of the skin, in one-half its extent, the skin preserved in the remainder, with instances of soft swellings, windgalls, thorough pins, and capellets.....	\$26 25
45. Foot of a horse, showing the disposition of the hoof, the "podophyllons," tissue, the vessels, nerves, etc., (all those parts taken to pieces).....	26 25
The same with the hoof, separating after the manner of Bracy Clark; showing also the parts to hold the shoe of Charlier's pattern.....	34 00
45 bis Model of Normal horse's foot, made of Plaster of Paris..	12 00
46. Horse's hoof, separable, according to the plan of Bracy Clark, into the wall sole, frog, and periople.....	8 00
The same; illustrating the shoeing of Charlier.....	10 50
47. Pelvis of mare, dry bones.....	26 25
48. Uterus of mare, empty, with internal and external appendages, Fallopian tubes, ovaries, etc., the whole fitting into the pelvis.....	42 00
49. Uterus of cow, empty, with its appendages.....	42 00
50. Uterus of cow, with the product of conception at the 4th month.....	52 50



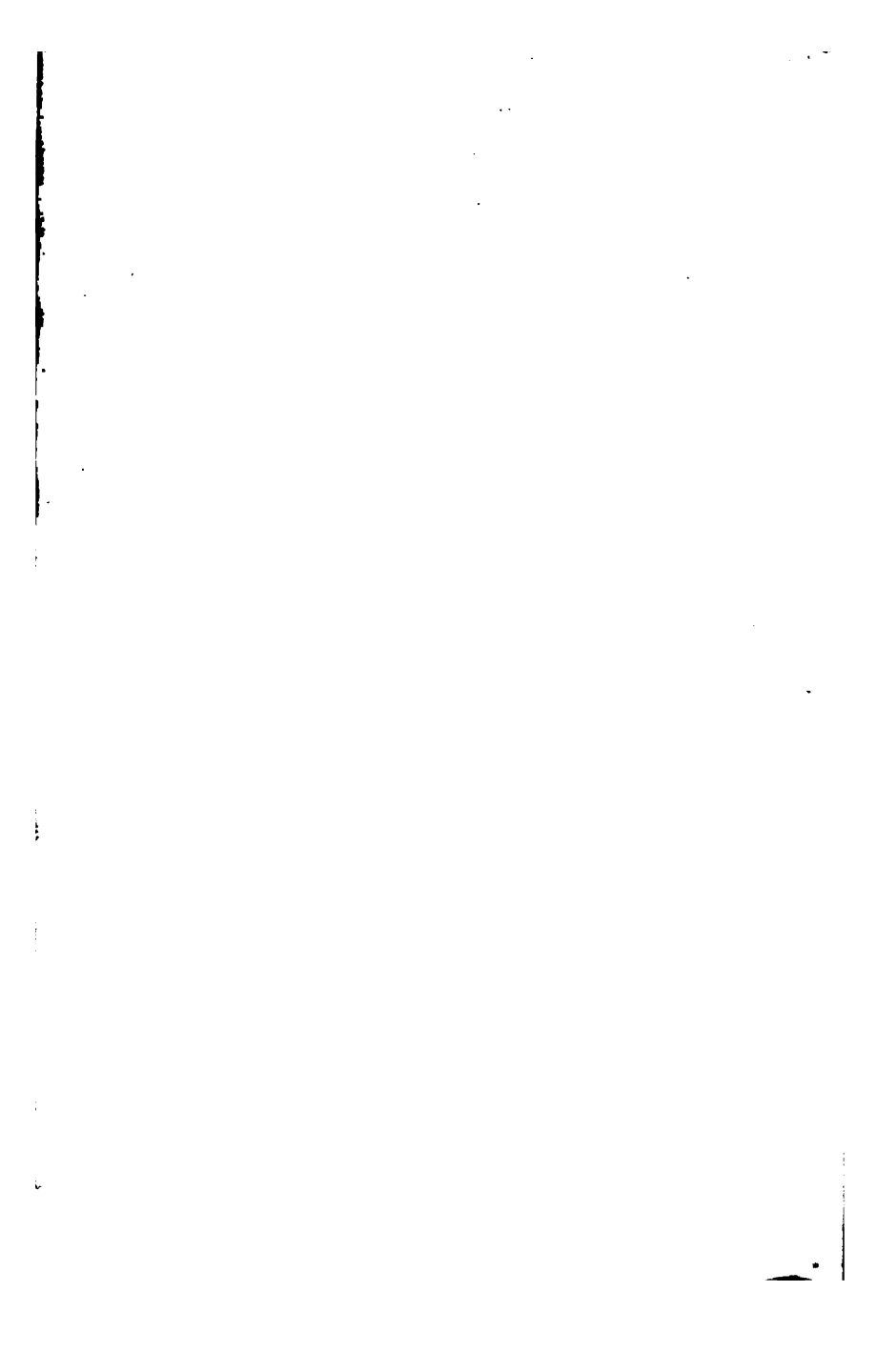
SKELETON OF THE HORSE.

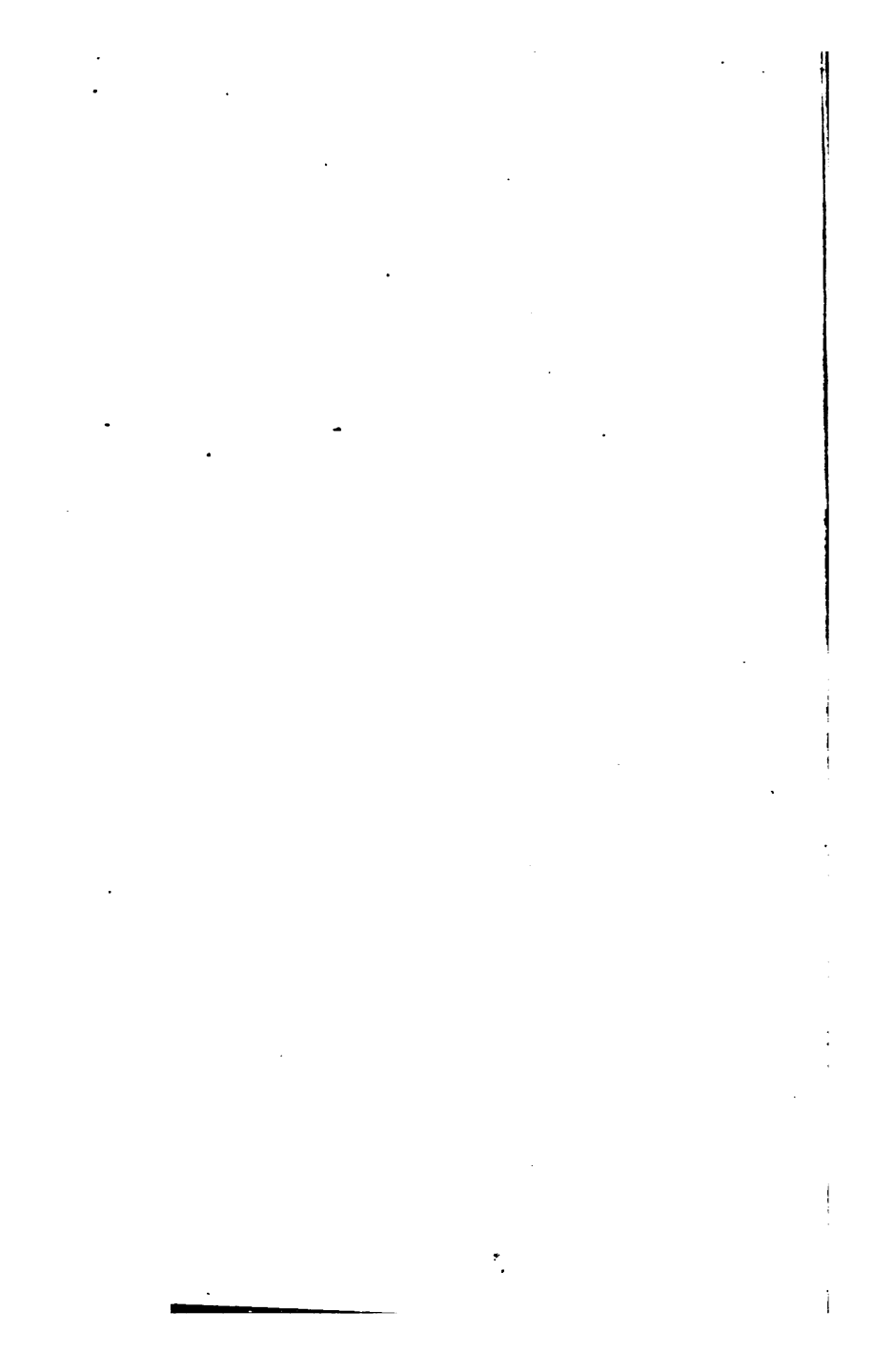
Price, \$109.

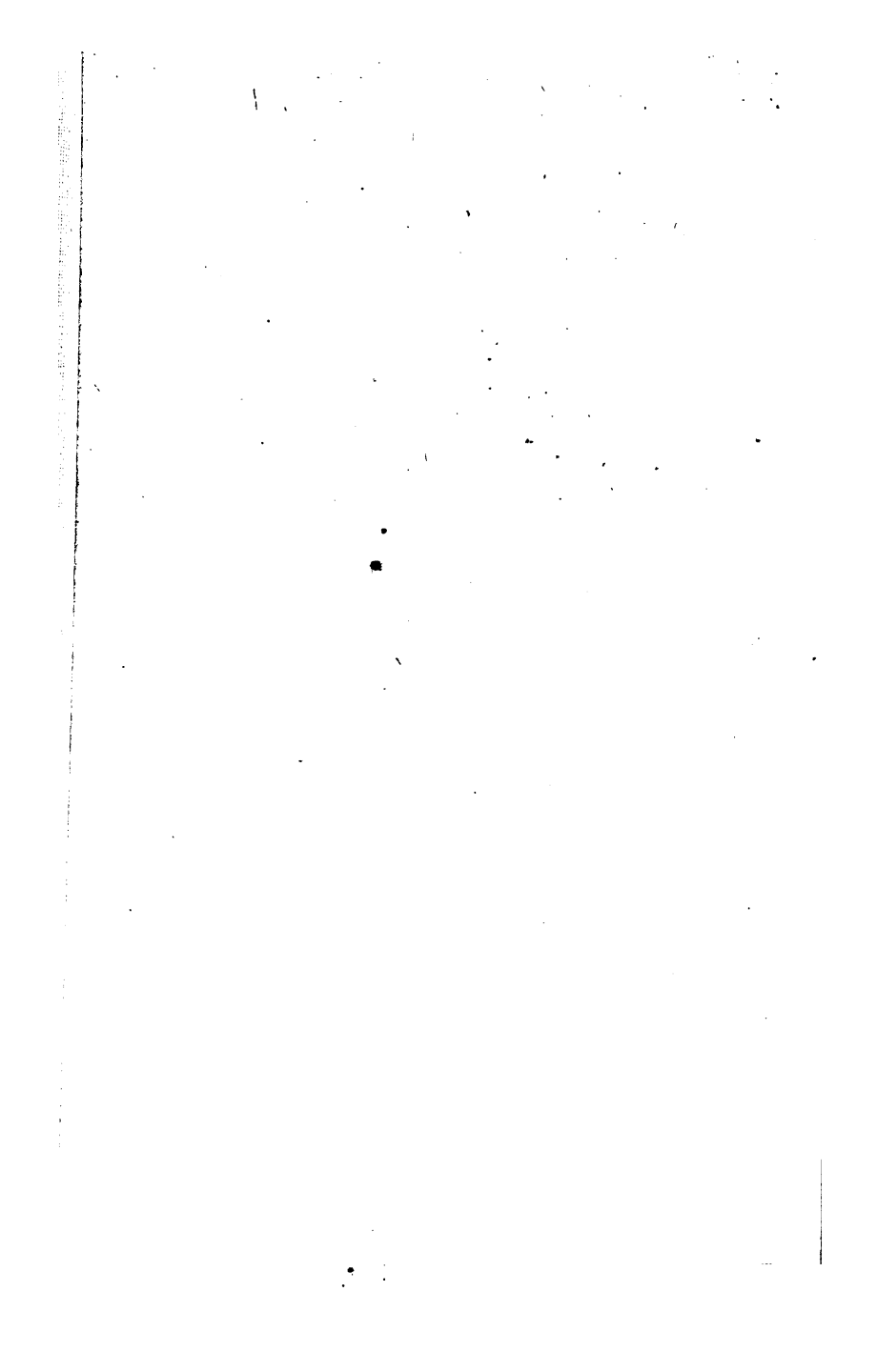


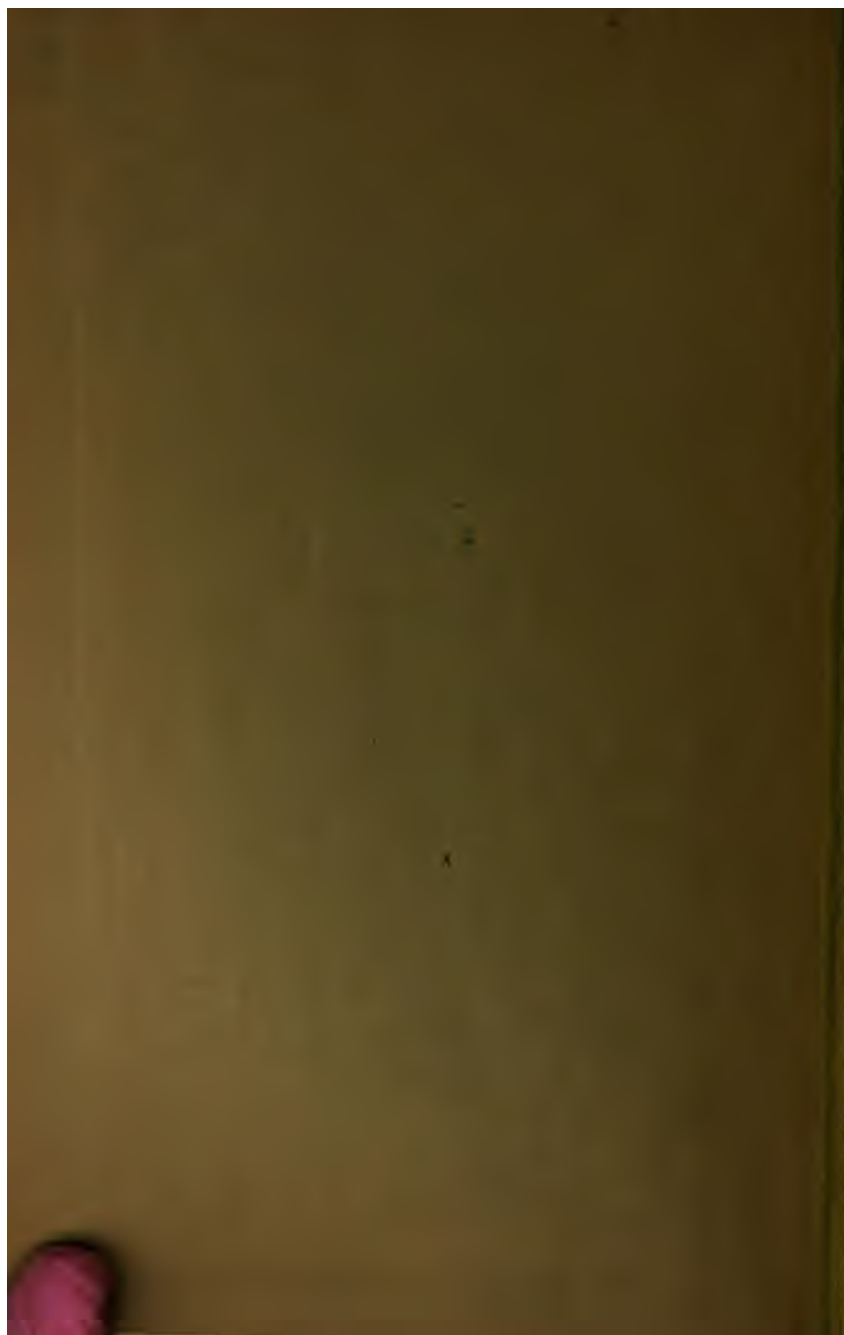


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